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ACCOUNTING AND FINANCIAL REPORTING RECOGNITION OF FIRMS' HUMAN CAPITAL INVESTMENT: AN EMPIRICAL INVESTIGATION OF FIRMS IN THE FTSE 100 LISTING OF THE LONDON STOCK EXCHANGE

VITHANAGE KRISHANTHI GANGA VITHANA

A Thesis Submitted In Fulfillment Of The Requirements For The Degree Of Doctor Of Philosophy In Accounting and Finance At Durham University Business School

2014

ABSTRACT

ACCOUNTING AND FINANCIAL REPORTING RECOGNITION OF FIRMS' HUMAN CAPITAL INVESTMENT: AN EMPIRICAL INVESTIGATION OF FIRMS IN THE FTSE 100 LISTING OF THE LONDON STOCK EXCHANGE

V K G VITHANA

Firms' spending on their employees is written off as expense to the annual financial statements under the current accounting treatment. This accounting treatment has been debated over decades, since employees are arguably claimed as the true value creators of firms' intellectual capital. Value creation potential of employees, identified theoretically as human capital has been researched for valuation and measurement for accounting recognition of human capital investment and decision usefulness of financial reporting recognition through mandatory and mostly voluntary disclosure. Research evidence are found under different phenomenon namely; social capital, intellectual capital, human capital, etc. considering, investment, accounting and reporting practices, though on an ad-hoc basis, highlighting the need for a study covering a holistic picture of the accounting and financial reporting recognition of human capital investment. Hence, the research is conducted, addressing the current practice of accounting and financial reporting recognition of firms' human capital investment, considering both determinants and consequences of the practice utilising a stakeholder approach. The research is undertaken with data collected from annual reports of firms of FTSE 100 listing of London Stock Exchange for five accounting years, (2004-2009) chosen subjected to data availability, analysed using panel data analysis techniques with fixed and random effect estimators coupled with pooled linear regression as an alternative approach. The results of the study indicated a significant variance in the practice implying positive influences on promoting the practice accounting and financial reporting recognition of human capital investment. The results further indicated the requirement of a framework governed by standards and guidelines in promoting the practice accounting and financial reporting recognition of firms' human capital investment.

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DECLARATION

I declare that this thesis is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person, except where due acknowledgement has been made in the text. I confirm that no part of the material presented in this thesis has previously been submitted by me or any other person for a degree in this or any other institution.

This thesis is dedicated to

my dear father

and

the most cherished memories of

my loving mother.

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CHAPTER ONE

INTRODUCTION

1.1 INTRODUCTION

The term human capital is not new in current business world as investment in employees is recognised by business leaders as, the golden rule behind the success of firms and the key resource base in gaining strategic competitive advantage. Terminologies including employee capital, human capital, human asset, intellectual capital, etc. have been in the accounting and finance glossaries for more than several decades, perhaps over centuries, reckoning the importance by almost all the categories of stakeholders in decision making (Becker, 1962; Bryer, 1994; Dooley, 2005; Brummet et al., 1968; Lev and Schwartz, 1971; Flamholtz, 1971; Elias, 1972; Schwan, 1976). As it is arguably proposed as the firm value creator, the varying degree of investment in human capital has made firms unique and distinctive from others with similar physical and financial asset base. However, it is questionable, whether the actual accounting and financial reporting recognition practices capture the above concepts adequately so that stakeholders can robustly rely on the information produced to make decisions about firms. This issue is identified in this chapter via background and motivation of the study, which subsequently is followed by research problem, research questions and objectives, indicating how the research gap identified has comprehensively been addressed throughout the thesis.

1.2 BACKGROUND AND MOTIVATION OF THE STUDY

Introduction of the concept human capital goes back to the labour theory of value where, pioneering economists argued on firm value creation via labour, which is accumulated as a part of the capital of the firm (Dooley, 2005; Becker, 1962; Foley, 2000). Despite the attention of those leading economists such as Sir William Petty (1623-1687), David Hume (1711-1777), Adam Smith (1723-1790), David Ricardo (1772-1823) and Karl Marx (1818-1883) who believed that the labour component of the firm has unique characteristics of value creation, which is termed as labour theory of value (Foley, 2000; Dooley, 2005; Becker, 1962) and accounting researchers attempting to measure / value (Lickert, 1971; Chen and Lin, 2004; Lepak and Snell, 1999 & 2002) and account for the human capital investment (Elias, 1972; Morse, 1973; Becker, 1993; DTI, 2003 a & b), very low or no amendments are observed in terms of the accounting and financial reporting practices recognising the human capital investment of the firms. Some of the attempts, even backed by government encouragement, aiming to consider formal recognition of human capital investment, have been in vain due the resistance of the professional accounting bodies (DTI, 2003 a and b; Roslender, 2009; Roslender and Stevenson, 2009; Roslender et al. 2004). As a result, the accounting and financial reporting recognition of human capital investment has always been limited to the traditional accounting treatment of considering the total amount spent on the employees as an expense, by writing it off to the income statement in arriving at the profit or loss, followed by qualitative recognition of employee contribution in firm value creation voluntarily via financial reporting mechanism of the firms.

The current accounting treatment of writing off of total spending by the firms on employees in the same accounting year it self, has been argued on several grounds. Seemingly responding to this criticism, voluntarily, firms have tended to compensate the adverse impact of the current accounting treatment via financial reporting. Moreover, though its doubtful about the extent to which, information produced and presented under the current accounting and financial reporting system, serve the purpose in stakeholder decision making, empirical evidence indicates that the accounting and financial reporting recognition of firms investment in human capital, as the value creator of the firms' intellectual capital base, through the voluntary disclosure practice have increased over the period of time (Abeysekera and Guthrie, 2005 and 2004). Against this backdrop, the research is conducted to elicit a holistic picture about the accounting and financial reporting recognition of firms' investment in human capital and the value relevance of this investment.

1.3 RESEARCH PROBLEM

The term human capital has widely been used by academics, researchers and practitioners over a long period of time, though there still has not been a generally accepted and agreed way of defining the human capital or human asset. However, considering the number of definitions proposed so far, human capital is understood to be as the potential of employees themselves in generating future wealth for the firms. Due to this value creation potential recognised, researchers have made several attempts to quantify the human capital investment of firms using different techniques such as; present value of future earnings applying discounted wage flows method

(Lev and Schwartz, 1971), acquisition cost (Brummet et al., 1968), replacement cost (Flamholtz, 1973), opportunity cost, market value, discounted earnings level, economic value, and group value model (Grove et al., 1977) etc.. In addition, recent studies attempted to classify revenue and capital portions included in the total human resource cost considering the extent of value and uniqueness of human resources, (Lepak and Snell, 1999 & 2002) which could have facilitated advancements to the current accounting and financial reporting practice.

Despite the number of theories proposed for accounting and financial reporting recognition of firms' investment in human capital aiming measurements, valuation, accounting and reporting mechanism (Elias, 1972, Schwan, 1976; Lepak and Snell, 1999 & 2000), there has always been a gap between theories proposed and the practical applications considering the current status of the accounting and financial reporting recognition of firms investment in human capital. Opposed to the human capital theory perspective proposed by the academics and the researchers, the expenditure perspective of human capital management and accounting adopted by the practitioners, has led to many adverse consequences. Since the total amount spent on employees is just an expenditure lowering the profit of the firm, in many instances one objective of human resource management function itself has been to minimise the human resource cost. This has particularly been the case in situations where, some stakeholders such as management and executives of the firm are rewarded on profit oriented performance parameters. The consequences of this tend even to be long-term creating impact on the strategic success of the firms as well. Therefore, the desired status in terms of the standard accounting treatment of fairly recognising the firms' investment in human capital, in a way that it reflects the firm

value creation by employees has yet to be developed compared to the existing practice of the conventional accounting treatment and the voluntary accounting and financial reporting recognition of firms' human capital investment. Accordingly, the research problem of the study is understood as;

Do firms adequately recognise the firm value creation via employees through current mechanism of accounting and financial reporting recognition of firms' investment in human capital?

1.4 RESEARCH QUESTIONS AND OBJECTIVES

A number of researchers have attempted to address some aspects of the above identified research gap in rather ad-hoc manner from different perspectives. Some researchers and practitioners have paid attention to the valuation and accounting for human capital investment separately from expenditure writing off, proposing alternative accounting treatments (Elias, 1972; Schwan, 1976), while others have proposed alternative valuation criterion applicable in measuring the value of human capital (Chen and Lin, 2004; Lepak and Snell, 1999 & 2002) or the value creation efficiency as a part of intellectual capital efficiency (Pulic, 1998 & 2000). On the other hand, the paradigm shift from hard economic and accounting perspective to the social and scientific perspective in the recent past has diverted researchers and practitioners attention as well towards voluntary human capital reporting and information disclosed in the annual report (Becker et al., 2001; Abhayawansa and Abeysekera, 2008; Abeysekera, 2008; Abeysekera and Guthrie, 2004; ACCA, 2009;

Ax and Marton, 2008). However, due to the very unique nature of human capital of the firms, its imperative to look from both quantitative and qualitative perspectives addressing issues related to both accounting *for* and reporting *on* human capital in a way that the firm value creation by employees is captured reflecting a holistic picture of the employee contribution.

Moreover, as stakeholder response to human capital investment depends on the accounting and financial reporting recognition of this investment, the research gap observed above has been addressed considering the variability involved in the accounting and financial reporting recognition of the current human capital investment of the firms in two directions; forward and backward, considering the reasoning behind and the expected consequences. Previous empirical evidences and theoretical explanations indicate that potential determinants of human capital investments could be identified as firm specific and corporate governance related determinants of the human capital investment of the firm (Ax and Marton, 2008; Abeysekera, 2010; Athanasiosis, 2013). Accordingly, the research questions of the study are cascaded down as;

- What is the current status of accounting and financial reporting recognition of investment in human capital of the firms in the FTSE 100 listing of the London Stock Exchange?
- What are the firm specific and corporate governance related determinants of the accounting and financial reporting recognition investment in human capital of the firms in the FTSE 100 listing of the London Stock Exchange?

- What are the consequences of the accounting and financial reporting recognition of the firms' investment in human capital for the firms in the FTSE 100 listing of the London Stock Exchange?

Considering the existing accounting and financial reporting practice and the information communicated to the stakeholders, the total human resource expenditure written off in the income statement lowering the current year profit and the voluntarily disclosed information in the annual reports as a part of corporate reporting are recognised as the key conceptualisation mechanism reflecting the firms investment in human capital. Therefore, addressing the research questions above, two main research objectives are formulated as;

- To understand the current practice, investment in human capital by listed firms as reflected via accounting and financial reporting recognition of this investment conceptualised via human resource expenditure, human capital per value added coefficient and voluntary disclosure of human capital information in the annual reports of the firms in the FTSE 100 listing of the London stock exchange.
- To examine the determinants and the expected consequences of accounting and financial reporting recognition of human capital investment conceptualised via human resource expenditure and voluntary disclosure of human capital information in annual reports of the firms in the FTSE 100 listing of the London stock exchange.

1.5 CONTRIBUTION AND ORIGINALITY

As it is stated under the background and motivation of the study as well, despite the long standing history starting from introduction of the labour theory of value by pioneering economists, studies about human capital concepts and efforts in accounting for human capital investment of the firms and financial reporting recognition of investment in human capital have taken a variety of approaches belonging to different research paradigms. Research evidence so far has addressed theoretical, methodological and empirical gaps in relation to human capital management, valuation, human capital accounting, and disclosure under financial reporting. However, the inadequacy in these studies is reflected via the lack of consensus in terms of accounting and financial reporting recognition of human capital investment, conceptualization of firms investment in human capital by researchers and the research frameworks and most crucially, in simply defining the above concepts. Accordingly, the research gap exists at different levels; empirical, methodological and theoretical, is addressed by evaluating the current practice of accounting and financial reporting recognition of firms' investment in human capital by highlighting the possible remedial actions. The contribution of the study at each level has separately been highlighted below.

Empirical evidence on accounting and financial reporting recognition of human capital investment is found addressing both developed countries (Becker, 1962; Bassi and McMurrer, 2005; Ax and Marton, 2008) and developing countries (Abhayawansa and Abeysekera, 2008; Abeysekera, 2008; Abeysekera and Guthrie, 2004; Hossain et al., 2004). The contributions of developed countries have mostly

been focussed on valuation of human capital, theoretical development, policy enhancement or formation and development of regulatory framework (Becker, 1962; Bassi and McMurrer, 2005, DTI, 2003 a & b). On the other hand, contribution of developing countries has represented empirical analysis of the proposed theories and practices (Abeysekera, 2008; Abeysekera and Guthrie, 2004; Hossain et al., 2004). However, in this study, considering the UK initiatives and efforts to formalise the practice human capital accounting and to develop policies to address the current inadequacies and anomalies in accounting for human capital, despite the influence of UK accountancy profession in effectively emasculating those efforts (DTI, 2003a and 2003b; Roslender and Stevenson, 2009) and the insufficient empirical analysis from UK context, an empirical analysis is conducted using the firms in the FTSE100 listing of the London Stock Exchange considering data availability for the analysis.

Most of the previous studies have taken an ad- hoc approach in terms of the methodology adopted, where they have either proposed a valuation mechanism, alternative accounting treatments or evaluated human capital disclosure in annual reports, in which case a combined approach referring to the accounting and financial reporting recognition of human capital investment by firms covering a holistic picture would be an original contribution in the field. The use of human resource expenditure, payroll cost and human capital information disclosed in the annual reports as proxies in conceptualising human capital investment (Pulic, 2000; Lajili and Zeghal, 2005b & 2006; Lepak and Snell, 1999 & 2002; Abhayawansa and Abeysekera, 2008; Abeysekera, 2008; Hossain et al., 2004) has not been entirely new. However, the empirical analysis of measures reflecting the accounting and financial reporting recognition of human capital investment including human

resource expenditure, human capital per value added coefficient and human capital disclosure from the human capital theory perspective, will be a unique contribution as the empirical analyses result in providing evidence to understand the inadequacy in terms of the current accounting treatment and financial reporting practice in adequately reflecting the firms investment in human capital. Hence, the results could be utilised in determining the considerations in enhancing the practice of accounting and financial reporting recognition of human capital investment.

In analysing the financial reporting recognition of human capital investment by firms through voluntary disclosures, empirical evidence to date has focussed mainly on the amount of information disclosed in terms of the number of words, number of sentences, page size, number of pages etc. via content analysis, opposed to the quality and the meaningfulness of the human capital information disclosed or how employee contribution assists in firm value creation. However, the current study proposes a methodology to capture the meaningfulness of financial reporting recognition of human capital investment in a way, that reflects firm value creation through human capital investment using a framework developed based on the balanced scorecard (BSC) (Kaplan and Norton, 1992 & 2001). Accordingly, in developing the human capital disclosure index, financial reporting recognition of human capital investment related information in the annual reports is gathered considering the information availability based on the balanced scorecard framework covering two dimensions; categories of human capital value creation factors (i.e. learning and growth related, internal business process related, customer related and financial perspective related) and the level at which the information is disclosed under each perspective (i.e. objectives, measurements, targets, initiatives and

achievements). This is adopted to reflect how human capital investment contributes to firm value creation. The proposed framework is an original contribution developed based on the BSC, which is applicable not only in human capital but also for voluntary information disclosures in general.

At theoretical contribution level, the implication of the empirical results highlight the fact that the current theories on accounting and financial reporting recognition of firms investment in human capital are proven to be inadequate demanding an advance framework to capture the firm value creation via employees. Thus, the considerations on an alternative framework for accounting and financial reporting recognition of firms' human capital investment could be highlighted subject to the findings of the study. In addition to the theoretical arguments in proposing standard frameworks for accounting and financial reporting recognition of firms human capital investment, this study supports the considerations on theory development via empirically analysing the current practice.

1.6 OUTLINE OF THE THESIS

The thesis is structured and presented in seven chapters including the current chapter. The current chapter, introduced readers to the concept human capital and the research gap in accounting and financial reporting recognition of human capital investment, briefly highlighting the motivation behind the study, research questions to be answered and objectives to be achieved.

Chapter two, literature review takes the reader through the concept of human capital investment paying particular attention to states of current accounting and financial reporting recognition starting from the broad concepts accounting and financial reporting in general. Subsequently, the chapter narrows down to focus on the accounting and financial reporting recognition of human capital investment, measurement and valuation of human capital investment and the contribution of previous empirical studies leading towards the research problem identification.

In line with the research problem identified, chapter three, theorising and conceptualising review the theoretical frameworks applicable in studying accounting and financial reporting recognition of firm practices and the human capital theory argument highlighting the significance of employees from human capital theory perspective. Critical evaluation of proposed theories explaining accounting and financial reporting recognition in light of human capital theory is undertaken in this chapter, facilitating the integration of these two together to develop the theoretical framework to achieve the research objectives articulated in the previous chapter.

The methodology chapter explains how the research process is executed based on the theoretical frameworks proposed in theorising and conceptualising chapter. This chapter hence, evaluates the concepts related to research philosophy, research paradigm, research approach, design and strategy, research sampling and data collection highlighting how each was decided on in the current study according to the proposed conceptual framework. In addition, the chapter further illustrates the research model leading to the hypotheses development.

Chapter five, as the first part of the data analysis and results focuses more on descriptive analyses. Starting with an explanation of the sample characteristics. The chapter has been expanded to explore and describe the current states of accounting and financial reporting recognition of firms human capital investment using both human resources expenditure and the qualitatively disclosed human capital information in the annual reports of the firms in FTSE 100 listing of the London stock exchange.

Chapter six illustrates the second part of the data analysis and results, which is aimed primarily at the inferential analyses conducted via hypotheses testing. Therefore, the chapter starts with the data diagnostic tests and addressing the data quality issue followed by the statistical analyses for hypotheses testing. The results are interpreted and discussed in light of the theories and the previous empirical findings.

The last chapter of the thesis presents concluding remarks to the thesis based on the analysis and the results. Further, the conclusion has also been enriched through the implications of the political involvement to the subject matted human capital accounting. Moreover, the implications of the results from different stakeholder point of view, limitations to the study and further research avenues as well have been taken in to account in providing the concluding remark.

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

The main objective of this literature review chapter is to provide a broader understanding about firms' investment in employees via accounting and financial reporting recognition of human capital investment measured in terms of human resource expenditure, human capital per value added and voluntary disclosures on human capital. To facilitate the discussion on investment in employees, it is imperative to understand the practices financial accounting and corporate reporting by paying particular attention to how the human resource expenditure and other relevant information are currently conceptualised to reflect the value addition via investment in human capital. Hence, in this literature review chapter, the process of financial accounting and corporate reporting has been elaborated while highlighting the ways and means of linking employees to the accounting and corporate reporting process. Firms' investment in human capital being the subject matter of the thesis, the current practice and the previous literature addressing how to deal with investment in human capital and accounting and financial reporting recognition of this investment through human capital expenditure, human capital per value added and disclosure is critically evaluated.

2.2 ACCOUNTING AND HUMAN RESOURCES EXPENDITURE

In the evolutionary process of accounting, which started with the introduction of the double entry book keeping system by Luca Pacioli in 1494, there were many significant milestones such as the use of subsidiary books, use of separate inventory accounts, emerging different branches of accounting, identification of fixed assets, accounting for pre payments and accruals etc.. Among them, the method of treating fixed assets evolved by the eighteenth century; and introduction of methods to depreciate assets were some significant contributions to the accounting field particularly since these methods allowed the accountants to value firms more fairly (Riahi-Belkaoui, 2000). Further, through this, the capital nature and the revenue nature of the transactions were introduced in arriving at the periodical profits. In this evolutionary process, depending on the contribution and the influence on the field, four clear phases have been identified as; (1) management contribution phase 1900-33 (influence of management on the formulation of accounting principles due to increasing number of stakeholders and diffusion of stock ownership), (2) institution contribution phase 1933-59 (influence of institutions such as security exchange commission in development of accounting principles), (3) professional contribution phase 1959-73 (formation and influence of professional accounting bodies in preparation and presentation of the financial information to the stakeholders and in particular formulation of accounting theories) and (4) politicisation phase 1973-present (the belief that accounting policies should be established in the political arena and they must be accepted by the affected parties) (Riahi-Belkaoui, 2000).

Since accounting and corporate reporting is essentially a part of organisational information systems, the ways and means of production and dissemination of information via accounting and financial reporting as well differs along this process of evolution. Emergence of more and more parties and their conflicting interest on accounting information has demanded changes in accounting and financial reporting practices of the firms (Riahi-Belkaoui, 2000); thus, many regulatory systems were formed and amended, over a period of time aiming to address the demand of a variety of stakeholder categories. However, their formal involvement via institutions, professional accounting bodies and the political systems of the countries have had a significant influence over the accounting practices, development of regulatory frameworks and the amendment of existing regulatory frameworks resulting even certain conspiracy (i.e. emasculation of the accounting for people initiative by the government through the influence of the UK accounting profession) over achieving the purpose from different stakeholders perspectives (DTI, 2003a and b; Roslender, 1997; Roslender and Stevenson, 2009).

Researchers have recognised accounting as an art, science or a language communicating business transactions (Riahi-Belkaoui, 2000). It's defined by American Institute of Chartered Public Accountants (AICPA) as, "the art of recording, classifying and summarising in a significant manner and in terms of money transactions and events, which are in part at least of a financial character and interpreting the result their of" (AICPA as cited by Riahi-Belkaoui, 2000, p. 60). The main purpose or the end product expected of the accounting process is to provide stakeholders of firms with required information relevant to the financial performance via financial statements and production of annual reports, which are

subject to audit by an independent party to ascertain the true and fare presentation of quoted public firms. Even though the accounting process is functionally designed and results are systematically presented, the entire process relies on a number of assumptions, which are not necessarily true in all circumstances. As an example, depreciation policies on fixed assets rely on the service life of the asset, actual usage in a year, etc., in deciding what has actually been spent during a period and what is remaining for future use. However, the reality may reflect the asset being completely obsolete before the economic life or may perhaps last much longer than expected providing economic benefits. Similarly, despite capitalising on tangible assets, money spent on employees, expecting to generate benefits for firms over a period of time, is completely written off in the year it is incurred.

The financial statements are a major component and essentially the end product of accounting and financial reporting process of the firms. They include income statement, statement of changes of equity and cash flow statement for the year ended referring to the accounting year of the firm and the balance sheet as at the end of the accounting year. In this context, considering the financial implication of human resource management of firms, under the current accounting practice and the regulatory frameworks of accounting: US Generally Accepted Accounting Principles (GAAP) and International Financial Reporting Standards (IFRS), the total amount spent on the employees is identified as a lump sum via the accounting information system. This consists of, wages and salaries, training and development expenditure, expenditure relating to other human resource functions of firms etc.. The total amount spent on the people of the firms identified above are classified as an expenditure in the year they are incurred, which ultimately is written off in arriving

at the profit/loss for the period, categorising under production cost, administration or other types of expenditure depending on the service offered by the employees. The only difference in classification of expenditure under the two systems above is that under US GAAP the expenditure need not be categorised according to the function or the nature, even though based on the security exchange commission requirements they are categorised based on functions such as cost of goods sold, administration, etc.. Under the IFRS however, entities may present expenses based on the function or the nature in which case if firms opt to present based on functions, certain amounts of disclosure about the function need to be included in the notes to the accounts (Ernst and Young, 2012). This indicates that, despite increases in human resources expenditure though actually is an investment from strategic management point of view, it has a decreasing effect on the profit according to the current accounting treatment while disclosing human resource expenditure have not even been a mandatory requirement under the financial reporting process. This inadequacy in the professional practice of accounting for human capital has been a major concern over several decades among the research community (Becker, 1962 & 1993; American Accounting Association, 1973; Lepak and Snell, 1999 & 2002; Bassi and McMurrer, 2005). This problem has been the subject of arguments over a long period of time among many leading philosophers (Dooley, 2005) including Sir William Petty, David Hume, Adam Smith, David Ricardo and Karl Marx who believed that the labour component of the firm has unique characteristics of value creation, which has been accumulated over a time as the capital of the firm.

The current accounting practices having only partially captured this value under different procedures. For example, the value creation potential over and above the

physical assets of the firms accumulated over a period of time is accounted for as goodwill in merger and acquisition activities. Additionally, among the other alternative frameworks attempting to measure the intangibles of firm, Statement of Financial Accounting Standards (SFAS) No 142, provides a basis for accounting and reporting of acquired goodwill and other intangible assets. However, if an intangible asset is acquired from an external source, it is recognised at its fair value. Whereas, in case of intangible assets developed internally, it is recognised as an asset only when it is incurred. In this case patents, licences and trademarks are recognised as assets though human capital or internally developed structural capital such as software and brands, which are developed by the employees of the organisation will not be treated as an asset for the firms (Holmen, 2005). However, from an accounting point of view, goodwill recognised is still treated as a trash item, which should be deducted as quickly as possible. Simultaneously, from the knowledge value point of view, it could be considered to reflect the intellectual value grows over time thus may serve as a supplement to financial information (Edvinsson, 1997). Therefore, in addition to the firms' investment in employees, the accounting and financial reporting recognition of said investment also has a vital role to play in firm value creation (Abeysekara, 2008; Edvinsson and Malone, 1997; Amir and Lev, 1996).

Composition wise, human resource expenditure incurred consists of different types of costs including payroll, functional costs, such as recruitment and selection, induction of the employees to the firms, training and development cost, retirement benefit and other employee benefits, replacement and relocation cost etc.. This has created a debate among accounting practitioners, academics and researchers since

some of these expenditure generate return over a period of time and not just in the year it's incurred (Lickert, 1971; Chen and Lin, 2004; Lepak and Snell, 1999 & 2002). As a result, even though the entire amount is written off as expenditure as it's incurred, whether and when this expenditure generates gains for the firm tend to change the states of a portion of human resource expenditure to an asset. This potential of employees to generate future benefit for firms, has been identified by many researchers decades ago in an attempt to generate the discipline of human resource accounting (Elias, 1972; Morse, 1973; Becker, 1993; Grojer, 1997). In these studies, many researchers attempt to develop techniques to measure the human capital in different means (Lev and Schwartz, 1971; Lepak and Snell, 1999 & 2002), while others (Elias, 1972; Schwan, 1976) have proposed various amendments for the accounting practice in order to capture the value of human resource investments either as human asset, human capital or even a liability to the firms (Flamholtz, 2005) under accounting and financial reporting process. However, very little or no penetration of the proposed methods to the real world indicates that there should be studies focusing the firm practice of investment in human capital, which would lead to theoretical level in a more utilitarian way enhancing the current practice.

The existing inverse relationship between investment in employees and the profitability based on the current accounting treatment tend firms to focus more on cost control instead employee value creation. This may even lead to unequal distribution of value added and wealth between stakeholders, creating cyclical adverse impacts on the entire economy, as was evidenced in the recent economic crisis. On the other hand, some of the early studies by Lickert (1971) on human capital management argue that, paying more attention on efficiency, cost control and

the earnings of firms, may result in changing even the human resource management systems from most productive to the least productive management systems creating greater issues for the future. One major limitation relating to human capital management studies is that strategic human capital management studies are hardly linked with human capital accounting studies, despite the imperative need to establish a proper link (Ax and Marton, 2008; Lepak and Snell, 1999) between them. The conceptualisation process of this study however, attempts to address the investment in human capital from both managerial and accounting point of view by conceptualising it as accounting and financial reporting recognition of human capital investment via expenditure, value added per human capital and voluntary disclosure on human capital.

2.3 THE CONCEPT HUMAN CAPITAL

The concept human capital has a long history in the fields economics (Becker, 1962; Bryer, 1994; Dooley, 2005; Foley 2000) and accounting (Brummet et al., 1968; Lev and Schwartz, 1971; Flamholtz, 1971; Elias, 1972; Schwan, 1976), where scholars have been highlighting the vital importance of the people component for organisations due to the unique potentiality to enhance productivity of the organisation and the firm value creation (Becker, 1962; Lickert, 1971). Human capital is understood as the source of knowledge (Edvinson, 1996), source of strategic innovation (Bontis, 1999) and as cited by Stewart (1997), human capital is the "place where all the ladders start; the wellspring of innovation and the homepage of insight" (p 86). However, the knowledge competent and technical skills explained

as the basic tacit element of human capital is owned by the employees (Youndt and Snell, 2004), thus it is even treated as movable and does not belong to specific organisation (Ross et al., 1997). Therefore, human capital can simply be explained as the potential of the employees to generate more wealth for organisations in future. Though it's not owned by the organisation, standard human capital management practices determine how well the tacit knowledge of the employees are transferred to the explicit and how well the intellectual capital of the firms are levered so that human capital is transferred to more explicit structural capital (Edvinsson, 1996). Even though many researchers have defined it in different ways, a universally accepted and a widely applied definition indicating the firms' investment in human capital is yet to be developed. This has left researchers and academics with a huge challenge in defining, measuring or valuing the investment in human capital of firms as it was never a black and white and contrary to the adage "a rose is a rose is a rose" and hence was quoted by (Flamholtz, 2005, p. 79) as "human capital is not human capital is not human capital". This indicates that starting from a proper definition for human capital, the concept of investment in human capital needs to be studied paying attention to the motives behind the practice and how to achieve strategic competitive advantage via this investment.

According to the leading economic researchers such as Sir William Petty, David Hume, Adam Smith, David Ricardo and Karl Marx, labour creates value and capital to a great extent consists of accumulation of past labour (Dooley, 2005). Labour theory of value has been one of the early concepts justifying human capital accounting as well as financial reporting in general (Zula and Chermack, 2007; Bryer, 1994). Due to the correlation Marxists emphasise between quality of labour

and productivity, they concluded that the more firms invest in people, the greater the resulting productivity. Thus, the amount spent on people has a capitalised portion, which will generate increasing return in future. This portion has not yet been understood as the human capital but only as accumulated capital that belongs to the shareholders of the firms. This has been the foundation for the Marxist exploitation arguments, though they couldn't find a complete relevance to each other (Cohen, 1979). Relying on this, most of the founding members of accounting and economics researches have argued that in accounting processes, employee spending should not be treated as expenses in the year incurred as returns are generated over time (Brummet et al., 1968; Flamholtz, 1972a & b). Analysing it further, Flamholtz (1972a & b) highlighted that human resources value is derived from the ability of employees to render service, which has economic value. However, in a society dominated mostly by capitalistic thoughts and practices, firms' willingness to consider economic value of employees as a key asset and formalising the practice is questionable. This has even been proven via the resistance of the professional accounting bodies in initiating the formal practice, accounting for people in UK (Roslender and Stevenson, 2009; Stittle, 2004).

The concept human capital is initially evolved with the proposed enhancements of economic valuation and accounting for employees. However, the less interest from practitioners' point of view and the great resistant of professional accounting bodies (Roslender and Stevenson, 2009; Stittle, 2004) in formalising the accounting process, have diverted researchers to look at the problem from a social scientific perspective rather from economic accounting perspective (Stittle, 2004). Thus, most of the studies afterward have paid attention to accounting and financial reporting

recognition of human capital investment via qualitative information disclosure (Abeysekara and Guthrie, 2004; Abeysekara, 2008). On this background, a combined approach to study firms' investment in human capital covering both quantitative parameters using human capital expenditure, and qualitative human capital disclosure would be a timely addition particularly from application point of view.

2.3.1 Measuring human capital

Relying on the assumption 'if something can be measured, it can be managed', researchers have made several attempts at measuring the human capital of firms at different levels using a variety of approaches such as direct measure of human capital (Brummet et al., 1968; Lev and Schwartz, 1971; Flamholtz, 1971; Flamholtz, 1972a; Flamholtz, 1972b; Flamholtz, 1972c; Morse, 1973), measuring human capital as a portion of human resource expenditure (Chen and Lin, 2004; Lepak and Snell, 1999 & 2002) or measuring it as an efficiency indicator (Pulic, 1998; Chan, 2009a; Chan, 2009b). However, the difficulty in linking human capital with financial accounting and reporting through hard accounting numbers has lead researchers to further explore the potential of accounting for employee wealth as a provision of softer accounting information (Roslender and Dyson, 1992; Roslender, 1997; Roslender and Fincham, 2001 & 2004). This has resulted in a paradigm shift from narrow economic-accounting perspective to a broader social scientific perspective in which case the previous attempts of valuing people and putting the values in the balance sheet has been diverted to generating softer accounting information via

qualitative means particularly through financial reporting recognition (Stittle, 2004). Despite the above paradigm shift, the requirement of a new accounting system to track people as an asset is still highlighted by many researchers (Bassi and McMurrer, 2005; Roslender and Stevenson, 2009).

According to Grove et al. (1977), many attempts of human capital valuation are based on identifying the properties, attributes or the qualities of a concept and establishing empirical rules of correspondence between empirical object and the numerals. However, since these measures explain the empirical object though not accurately measure the exact phenomenon they are called surrogate measures. As far as these surrogate valuation aspects are concerned, the human capital measurement systems have basically been categorised in to two based on input or output related measurement systems based on the human value attribute for the firms. The input based measurement systems include acquisition cost (Brummet et al., 1968), replacement cost (Flamholtz, 1973), discounted wage flows (Lev and Schwartz, 1971) etc., while the output based measurement systems include opportunity cost, market value, discounted earnings level, economic value, and group value model (Grove et al., 1977). Each of these methods are further elaborated in the section below explaining how the measurement methods are developed and the principle behind valuation, to what extent they have been applied in the real world accounting and financial reporting practice and limitations associated with this practice particularly highlighting why each of them has/ has not penetrated and survived in current accounting and financial reporting practice.

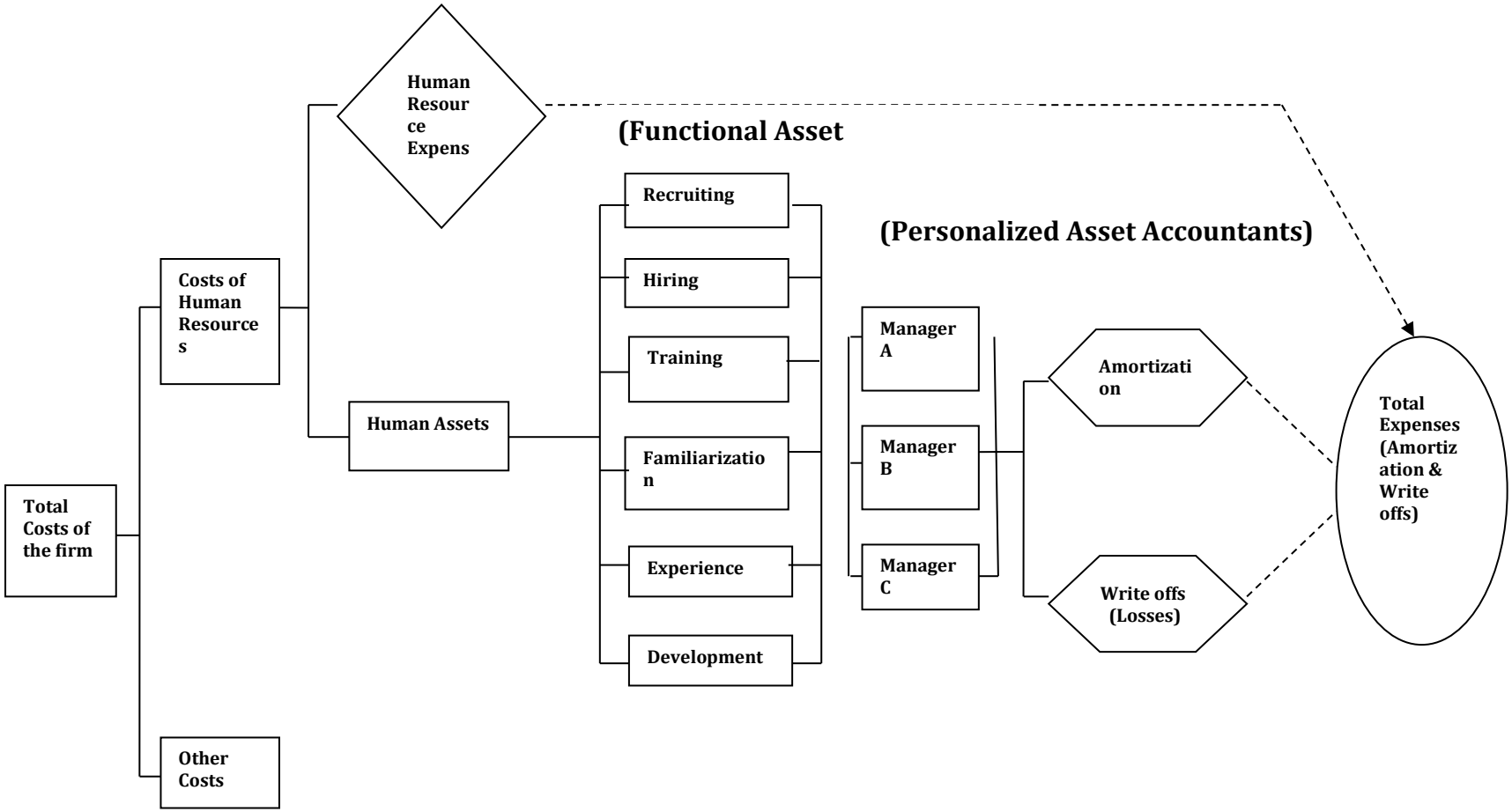
Brummet et al. (1968), have suggested a valuation mechanism based on acquisition cost proposing to treat the outlays for human resources to be treated as “capital rather than consumption” or “asset rather than expenses” due to the future services potential of human resources. In measuring human resources, total human resources cost was initially categorised to human resource expenses and human resource asset (figure 2.01). Human asset component then is further classified in to functional asset accounts such as recruiting, hiring, training, familiarisation, experience and development, the total of which have then been allocated to personalised asset accounts representing individual managers. Amortisation of personalised asset accounts and the write-offs based on losses relating to, personalised asset accounts are added to the human resources expenses as total for annual human resource expense, amortisation and write-offs providing even an alternative accounting framework for human capital investment and expenditure by firms.

This process is clearly illustrated in Figure 2.01: a generalised model for human resource accounting system for managers. However, since the method has initially been proposed for management by going down as detailed as possible even up to the individual manager level, it is questionable whether this method is applied only to the management level and all the human resource cost incurred on the levels below is to be written off completely or else to what extent this breaking down is possible up to an individual employee level of firms; if firms opt to capitalise the spending on all the levels of employees. As a result, the proposed valuation technique has its own limitations in applying for a modern day organisation as a surrogate measure reflecting firms investment in human capital. This is particularly true since the

marginal cost of the practice human capital accounting also need to be compared with the marginal benefit expected through the practice.

Moreover, the application, being based on the historical cost as used by even R G Barry Corporation shares all the disadvantages of using historical cost in valuing assets. As example, the use of acquisition cost, predominantly a historical cost component may not reflect the current value of the human capital of firms (Grove et al., 1977). In such a situation, the historical cost wouldn't rather reflect the firms true investment in human capital. Identifying this limitation, alternative surrogate measures such as, replacement cost (the cost to replace firm's existing human resources) and the economic value (the present value of the portion of firms future earnings attributable to human resources) as well have been proposed (Brummet et al., 1968).

Figure 2.01: Generalised model for human resource accounting system for investment in managers.



Source: Brummet, R. L., Flamholtz, E. G. And Pyle, W. C., (1968), Human Resource Measurement- A Challenge for Accountants, the Accounting Review, Vol 43 No 2, p. 222.

Flamholtz (1971), relying on output basis focussed upon the measurement of an individual's value to a particular firm and represented a normative model for the economic valuation of individuals. Contrary to the model proposed by Brummet et al. (1968), Flamholtz (1971, P. 255) claimed that "in principle, human resource valuation is appropriate for any individual in any specified organisation; factory workers and production foremen, salesmen and sales managers, computer programmers and information system designers, corporate presidents and even accountants". Therefore, in this study valuation has been based on individuals since individual is the primary focus in many of the organisational decisions such as selection training allocation (placement), job design, promotion compensation etc.. In this valuation of individuals, the present monitory equivalent of the expected service (economic value) of a person is obtained using a stochastic model considering the service level, the service group and for how long each individual is going to offer service. Determinant of the probability involved in the model, estimation of the period involved and obtaining the value of the service offered by the individuals and acquiring data will be some of the issues involved in this model considering the valuation. In many instances, inherent issues linked with the above aspects of the model tend to overwrite the theoretical validity of the models. The same limitations even have resulted in vary rare or no application of this model in empirical studies on investment in human capital of firms. Alternatively, the model may be viewed as a standard against which the operational models are assessed. Understanding the difficulty in valuation of an economic method Flamholtz (1971) as well have proposed some alternative surrogate measures: acquisition cost, replacement cost, current cost, compensation and performance measures, some of

which were used subsequently by some researchers including Lev and Schwartz (1971) instead the economic valuation.

Lev and Schwartz (1971) proposed another input based model for the individual valuation and this model assumed that the aggregate value of human capital was the sum of the values of the individuals. They have treated human capital as “a source of income embedded in a person (in the form of his brute force and his natural and acquired skills” (p. 104). In this research they have used the accounting concept of “service potential” as the principle to calculate human capital value of the individuals. Therefore, the discounted future earnings of the employees according to the earnings profile of each of them have been treated as the human capital of the firm. Due to the fact that this method addresses some of the issues related to the historical cost and the acquisition cost methods by considering the expected future wage flows, it tend to do justice in recognising the value creation potential of investment in human capital. As a result, this method should have been applicable for empirical investigations from behavioural aspects of human capital investment. However, the use of current data on earning distribution classified by the age, education, skills, etc., and the problems such as the use of prevailing interest rate, inability to determine the expected service life, retirement age, and accidental loss of employees due to death and other reasons might lead to some difficulties in estimation of the human capital of the organisation. This method has been proven practical compared to many of the previous economic valuation of the human capital. Even after several decades of introduction, several firms in Sri Lanka has applied this method to calculate the value of human resources of the firm even though these firms have just disclosed the value of human resources rather than

accounting for or incorporating these values to the double entry system (Vithana, 2009; Vithana and Gunaratne, 2009). However, the practice being less widespread and unavailability of data to researchers; have limited researchers in utilising the method frequently.

In response to the article by Lev and Schwartz (1971), their work has been criticised for the lack of relevance and utility to decision makers by Flamholtz (1972c). Flamholtz (1972c) further argued on the point saying that "a person's skills and knowledge are not valuable to an organisation per se; rather they are valuable if and only if they are expected to serve as a means to given organisational ends" (Flamholtz, 1972c p.148). This implies that considering the way human capital investment is perceived by different stakeholders, employee contribution for the firm value creation reflect the investment in human capital not just via the economic value but recognition as well. Flamholtz (1972c) further emphasises that there are several significant applications and implications for management and investors that has not been considered by Lev and Schwartz (1971).

Replying to this argument, Lev and Schwartz (1972) pointed out the non-existence of a well-defined and empirically valid set of decision models used by the investors. They further reasoned that due to the absence of such a formal model it has been impossible to define precisely the role of human capital information in financial decision-making. The inadequacy in a valid set of a decision model as well as a standard mechanism to account for and disclose human capital information have still been grey areas in accounting literature.

Applying another input based method of valuing human capital, replacement cost was proposed as appropriate and tested for an insurance firm by the well-known human capital scholar Flamholtz (1973). According to Bonbright (1937, as quoted by Flamholtz, 1973), replacement cost is defined as " the cost that would be incurred by an actual or potential owner on acquiring an acceptable substitute property". Based on that, Flamholtz (1973 p.10) has defined the replacement cost for the valuation purpose as "the sacrifice that would have to be incurred today to acquire a substitute capable of rendering a set of services equivalent to that provided by a resource presently owned or employed" and the same has been proposed as a surrogate measure for individuals as well considering the people firms have employed. In this method, they tried to value the human capital using the direct and the indirect costs belonging to the three main types of replacement costs including acquisition cost, learning cost and separation costs. This calculation included opportunity cost as well under indirect costs (Flamholtz, 1973). Though the technique is adopted more as human resource accounting technique there were many managerial applications and implications of the valuation techniques developed than just for financial accounting and reporting. The extent to which this information could be useful and appropriate for external stakeholders' decision-making becomes debatable. This is quite inevitable due to the lack of penetration of this method to the real world as well.

Paying attention towards the same aspect of valuing human asset vs. human capital of the firm (Flamholtz, 1971 and Lev and Schwartz, 1971), Morse (1973) as well utilised the time value of money concept in deriving the human capital as well as human assets of the firm, not in an alternative but in a complementary fashion.

According to this study, human resource value of the organisation is equal to the sum of the organisations' human asset from organisations' point of view and its employees' human capital considering employees' point of view even though many of the previous studies are primarily interested in determining only the value of human asset from organisations point of view. However, if firms wish to disclose human resource value, the choice is up to the firm to decide how to disclose. If firms wish to disclose human resource value in financial statement according to proprietary theory, the net value of human assets is disclosed since proprietary theory is primarily concerned with the net interest of the owners. On the other hand, if firms disclose human resource value according to the enterprise theory, it would be necessary to disclose separately both total value of human resources employed in the organisations and the interest in these resources since financial statements prepared according to the enterprise theory of the firm reflect the interest of all the stakeholders. Accordingly, increase in investment in wages, training and development of the employees of the organisation act as determinant of investment in human capital of the firm. Moreover, the findings provide implications on the human capital accounting practice as well since it consider human asset as well as the employees' human capital, which ultimately reflect upon how it's a liability to the firm.

Dollarized attitude has been understood as another input based measurement system for investment in human capital (Myers and Flowers, 1974) based on the assumption that salaries are money invested on employees by organisations to use their productive skills. Employee attitude score is recognised as a meaningful indicator reflecting the extent to which applied skills represent an adequate return on

investment in employee salaries. Accordingly, salary and the attitude are identified as central variable for job performance too and these two quantitative and the qualitative attribute measured using a scale is combined together to calculate the investment in human capital as dollarized attitude gain in favourable attitude situation and deficit in unfavourable attitude situation (Myers and Flowers, 1974). The method is developed based on individual employees and both salaries and the attitude survey result are needed for calculation purpose. As a result, even though the method has been understood viable and applicable decades ago, it should have been difficult to adopt the same model for much sophisticated current organisational settings. However, the use of financial and the attitude parameters together are appreciated and this provide an insight even to the current researchers in terms of financial recognition of the investment in human capital via human resources expenditure and the qualitative information on employees.

Through careful review of human resource valuation models, Grove et al. (1977) proposed a five-step measurement model considering both factual and purposive measurement characteristics. The steps of this model include; "(1) identifying the decision context and related measurement needs; (2) investigate the attributes of interest and corresponding theoretical relationships; (3) investigate existing measurement techniques for possible applications; (4) investigate emerging measurement techniques for possible applications and (5) analyse the relevance of each applied techniques in the specific decision context" Grove et al. (1977, p. 231, 232).

The same model can even be applied in studying the behavioural aspect of human capital information and accounting related decisions as well since it allows the potential measurements to be rather utilitarian as the model aims at the specific needs, theoretical relationships, possible application of existing and emerging measurements, application and relevance under specific decision context facilitating researchers and the practitioners to propose rather practical approaches. However, most of the previous measurement techniques proposed above serves rather a managerial purpose than being a part of the accounting and financial reporting. Moreover, the lack of penetration of these models to real world in terms of accounting and financial reporting practice, may even imply that the methods proposed are less appropriate from accounting and financial reporting point of view. However, researchers have attempted to propose some alternative accounting and financial reporting frameworks for human capital and they have been elaborated in detail in the section below.

2.3.2 Accounting for Investment in Human Capital

Commenting on and criticising the deception involved in all time favourite quote "our employees are our most important - our most valuable asset" many economic and accounting researchers started studying about investment in employees and financial aspects relating to employees. Brummet et al. (1968) was the first to introduce the term human capital accounting. Though the term human capital accounting was introduced to the field, many of the early studies were limited to the measurement of firms' investment in human capital rather than accounting for the

actual value of human capital of the firms using any technique. On the other hand, considering the inadequacy of the measurement and application criterion Brummet, et al. (1968) developed the foundation behind developing a measurement criteria for human capital, and how human resource expenditure are categorized in to functional asset and personalized asset accounts separately from the expenditure accounts and ultimately, how the human capital accounting practice is to be shaped covering human resource expenditure, human resource asset and the periodical amortisation of human asset value depending on the actual use of the asset. Even though the measurement criterion are proposed for all this, they did not suggested any explicit accounting treatment or techniques facilitating the accounting and financial reporting practice which ought to be the ultimate objective of human capital accounting (Brummet et al., 1968).

The concept human capital accounting has initially been defined as "the process of identifying measuring and communicating information about human resources to decision makers" (Flamholtz, 1972a, p. 44). Identifying the inadequacy of the systems available to account for employees, many researchers have taken attempts to propose alternative accounting treatments for the human resource expenditure and the proposed human capital measurements (Elias, 1972; Schwan, 1976). Considering the practical applications as its stated by Elias (1972), R. G. Barry Corporation has been the first firm to account for human resources expenditure in the financial statements and the annual reports in 1969 and 1970 (Brummet et al., 1968; Grove et al., 1977). However, this practice did not manage to penetrate to the other firms and even to survive in the same despite the attempts of many scholars (Brumet et al., 1968, Flamholtz, 1972; Roslender, 2009; Roslender and Stevenson, 2009) to make it

compulsory under accounting and financial reporting system. Deviating towards the experimental approach Elias (1972) and Schwan (1976) have studied about the possible accounting treatment for human capital particularly attempting to discover how the human capital accounting practice affects financial decision-making.

Elias (1972) examined different stakeholders' respond to the human asset treatment by capitalising and amortising human asset over a period of time. An experiment was conducted using two comparable but not identical hypothetical firms, out of which XYZ develop and build-up its' human resources while the ABC is liquidating a part of its' human resources. According to the "conventional treatment" of preparing financial statements ignoring human asset, ABC look better reflecting higher net income where as when additional data for human assets were incorporated according to "human asset treatment", XYZ reflected higher net income. Finally, above two treatments were simultaneously applied as the "combined treatment". Questionnaires containing one of the above three sets were sent to the sample respondents consisting with Chartered Financial Analysts (CFAs), other Financial Analysts (FAs), Chartered Public Accountants (CPAs) and three students groups representing students from intermediate accounting course, senior class in advanced accounting courses and senior finance courses, asking them to choose one firm to invest 10 % of their net annual income. The results revealed that, the company choice by the respondents is associated with the experimental treatment for human asset in annual reports in comparing the two treatments, conventional vs. combined, in which case the association is higher with CPAs while lower for the intermediate accounting students followed by the CFAs.

The higher association for CPAs revealed that they are more aware of the limitations in the financial statements in providing sufficient information implying that, though they may be hesitant to provide human resource data they themselves would like to have more information on it. In comparing the group receiving the human asset treatment vs. the sum of the other two, the company choice by respondents was associated with the experimental treatment with rather a higher degree of association and in this case a higher degree of association was observed in CFAs while it was lower for advance accounting students. Though it has been hypothesised that some of the background variables such as education, familiarity with human asset accounting, experience etc., may also have a significant impact on the experimental treatments, the results revealed no such relationship. However, some variables such as education level and discipline might have had a significant influence over the response to this additional information in the annual reports. One more limitation to the results of the study might be that, the difference in responses possibly be recognising as more attributable to the net profit between the firms due to the capitalising and amortising human resource spending rather than the inclusion of the human capital information.

Despite being an experiment with just two hypothetical firms, if the same methodology should have been applied for a bigger sample of real firms, the results might have been more valid, reliable and provided more implications for the stakeholders due to increased generalizability of the results. Many inherent limitations of this study such as; use of student for the sample, exclusion of annual report information other than abbreviated financial statements, the simple nature of decision, that is; selecting one company than different types of the decisions and no

reasoning behind the decision making under each decision; were addressed in a subsequent study by Schwan (1976).

Schwan (1976) has examined the stakeholders' response on human resource accounting data on financial decisions using two sets of real world financial reports, which are anonymous. The set A consisted with conventional financial reports; while in preparing the financial reports in set B, human resource cost has been amortised over a five year period. The design in this research was slightly different compared to the previous in number of ways. Student groups are completely eliminated and managers and analysts from 10 large banks representing investment, trust and credit departments were chosen to be the sample. The two sets of financial statements included more information about the firms covering the whole annual report and human resource data were scattered all over the reports making them less obvious. Participants were asked to make different decisions such as understanding the capabilities of management, and anticipating the future operating results of the firm than just asking to chose whether to invest or not. They were further given opportunity to explain about their decision to understand the reasoning behind. The findings revealed that "bankers who read financial statement which report human resource data make significantly different decisions about the firm than bankers who read conventional financial reports" (Schwan, 1976, p. 222). Thus, there is an effect of human resource accounting data on the financial decisions. Detailed analysis emphasised that this was particularly the case regarding management's preparedness for challenges and opportunities in future and prediction of net income for the future year compared to the present management situations. The results proved that accounting recognition of human resources by firms have had a strategic competitive

advantage, which was recognised by the respondents of the sample. However, considering it being a real world model, expanding the research to consider the other industries and even to include the categories of different stakeholders, would improve the findings by way of increasing the quality of results in terms of the validity, reliability and generalizability.

One common limitation for both of the above studies is that, the research is conducted to discover the practice human capital accounting from the point of view of limited external stakeholder groups. However, the stakeholder perspective on accounting and financial reporting demands this issue to be explored both from the internal and external stakeholder point of view. Nevertheless, the experimental approach might be appropriate to research human capital accounting practice in a rather controlled atmosphere, which is not the case in either Schwan (1976) or Elias (1972) studies. Due to the specific nature of the study, limited sample size and inadequacy of the repetition to ascertain the consistency of the result, the validity and generalizability of the experimental finding becomes questionable.

The methodologies developed in valuing and accounting for intellectual capital have not been so appealing as they have hardly been penetrated to the practical world as well as rarely been approved by the accountancy bodies in many countries. However, it has been possible to attract the attention of the accountancy bodies as well as practitioners in Scandinavian countries (Roslender and Fincham, 2004; Olsson, 1999) since 1990s as they have taken a particularly strong interest over human capital accounting and social accounting. This considerably positive involvement in human resource oriented accounting developments by both private and public sectors

have reflected the social settlement characterising the Swedish society after 1960s (Roslender and Stevenson, 2009; Olsson, 1999). In this context, one of the prominent contribution is that moving from not so appealing human capital accounting concept of 1960s and 1970s (Brummet et al., 1968; Lev and Schwartz, 1971) towards the cost and management accounting perspective introduced by Grojer and Johanson, (1996 and 1998), which emphasized the human resource costing and accounting aspects as rather a utility analysis. This in fact has even been perceived as an extension to human resources accounting with the new aspect, utility analysis serving management accounting purpose.

Under the utility analysis proposed by Grojer and Johanson (1996), in addition to incorporating human resource cost and accounting to the profit and lost statement and the balance sheet of the firms (Grojer, 1990 & 1994 as cited by Olsson, 1999), the model is designed in a way that it provides information which are central to the human resource accounting approach as well as for the decision usefulness under management accounting approach. Therefore, the principle focus of utility analysis was on investment in human resources in terms of cost classifications such as recruitment, placement, training and performance measurements rather than their value to the organization. Despite being voluntarily applied in private as well as public firms in Scandinavian context this valuable effort to human resource accounting from management accounting perspective as well has rarely been penetrated to the other parts of the world. However, the same model has been subjected to a quiet a lot of subsequent human capital studies as a seminal contribution (Roslender, 2009).

Throughout previous studies, it is evidenced that, over the period of time human resources organisation and functions of firms have evolved via different phases (Wintermantel and Mattimore, 1997) in a way that human resources becomes the primary source for genuine strategic competitive advantage. Under the most recent phase of evolutionary process, the intellectual capital grows, stays and becomes accessible to those who need it by becoming a capitalised component. At least some if not all the current firms have achieved this last phase. Considering this evolutionary change, Wintermantel and Mattimore (1997) attempted to emphasise that the measurement of human resources function of the organisation should be inline with the overall human resources mission of the organisation (Bart, 2001). However, the current accounting treatment developed long ago reflecting the human resource organisation and functions then, has never changed in order to reflect the above-mentioned evolution of human resource organisation and functions. As an example, traditional measures of human resource productivity and human resource accounting have been inappropriate and irrelevant in reflecting the current employee involvement via human resource organisation and functions since they are focussed only on tracking administrative activities and cost, while they should be reflecting the actual investment in human capital (Wintermantel and Mattimore, 1997).

Considering the characteristics of human resources (value and the uniqueness), Lepak and Snell (1999) proposed the human resource architecture model as an alternative framework to be used by firms for strategic human resource management decisions. In this model, using the three theoretical frameworks human capital, transaction cost economics and resource based view the researchers have explained how human resource management decisions vary based on the uniqueness and the

value of people. The model facilitates firms to understand which form of human capital has the potential to be a competitive advantage for the firm, thus focuses more in human capital development. However, a major limitation of the study is that though the researchers used the term human capital of the firm and proposed the mechanism to develop human capital from strategic human resources management point of view, there still haven't been proposed amendments from accounting and the financial reporting point of view to understand firms' human resources expenditure from capitalization perspective. However, issues highlighted by Wintermantel and Mattimore (1997), have been addressed by Lepak and Snell (1999) via attempts to align human resource organisation and the functions with the investment in human capital using transaction cost theory, human capital theory and the resource based theory.

Referring to the inadequacy of accounting and financial reporting recognition of firms' investment in human capital, the same model has been applied as a foundation to focus on accounting for human resource expenditure of the firms by Chen and Lin (2004). They attempt to identify which spending on human resources actually should be treated as human capital and recognised via accounting and financial reporting. Even though they focused on calculating the value of human capital of firms developed over a period of time or at a particular point of time, neither Lepak and Snell (1999) nor Chen and Lin (2004) attempted to propose an alternative accounting treatment or discover the impact of spending more on employees of firms. No acceptable evidence revealed that this method has ever been penetrated to the real world practice either. In the absence of firms attempt to split up human resource cost to reflect capital and the revenue portions, testing the model

empirically to discover the impact of investing on people remains impossible leading researchers to rely on information available in current accounting system.

Even though accountants possess special skills applicable in development of human resource accounting systems, whether they are willing to use these skills to generate a solution or whether they prefer to stay in the comfort zone of familiar conventional accounting treatments is a question (Caplan and Landekich, 1974 as cited by Turner, 1996). Moreover, recent research evidence claimed that there has been a considerable resistant from the regulators perspective as well against the practice accounting for investment in human capital of the firms (Roslender, 2009; Roslender and Stevenson, 2009; Roslender et al., 2004). Despite the inadequacy of measuring as well as accounting and financial reporting recognition of investment in human capital (Roslender et al., 2004), this investment has a variety of direct and indirect impact on performance indicators, financial and/or otherwise. Therefore, the literature review is extended to cover the impact of investment in human capital and the financial recognition of this investment from multiple stakeholder perspective, highlighting the decision-making frameworks.

2.3.3 Impact of investment in human capital

Human capital or the productive capacity embedded in people is one of the most important determinant of economic growth from individual, society or the firm point of view (Bassi et al., 2004). As a result, considering firm level studies particularly on stakeholder decision-making, researchers all over the world have attempted to study

the impact of investment in human capital on firm productivity, financial and stock market performances (Bassi et al., 2004; Groot 1999; Black and Lynch, 1996). However, researchers have revealed that it's difficult to create a measurement instrument between the investment in human capital and even social capital on organisational performances (Brooks and Nafukho, 2006) due to the conceptual gap between measurement criterion and the stakeholders' decision-making process (Blundell et al., 1999).

However, the question of utility of models used to measure the investment in human capital in real world decision-making, has been addressed by researchers in different means (Pulic 1998 & 2000; Flamholtz, 2005). One of the widely applied among those is the development of Value Added Intellectual Coefficient (VAIC) (Pulic, 1998 & 2000). Pulic (1998) initially developed the Value Added Intellectual Capital Coefficient (VAIC) as the sum of human capital coefficient (VAHU) and structural capital coefficient (STVA), as an aggregate measure of corporate intellectual ability. In the value added intellectual capital coefficient model, the efficiency of firm in terms of physical asset, e. g. capital employed (VACA = value added divided by capital employed) and intellectual capital components; human capital (VAHC = value added divided by human capital in terms of the amount paid to the employees) and structural capital (STVA = structural capital or the difference between value added and human capital divided by capital employed) are calculated as efficient indicator of the firm value added (i. e. the difference between the input and output or in other words, firm value added belonging to the owners, employees, debt holders and the government). The total of above three coefficients have been taken as the value added intellectual coefficient, which has been used very widely in subsequent

intellectual capital investment related studies addressing different contexts particularly to understand impact of firms' investment in intellectual capital on financial performances and capital market performances (Chan, 2009a; Chan, 2009b; Chen et al, 2005; Tan et al, 2008; Nazari and Herremans, 2007). Public availability of input data to the model has expanded the application for several empirical analyses (Chen et al, 2005; Tan et al, 2008; Nazari and Herremans, 2007). Since value added intellectual coefficient model measure the capital utilisation efficiency rather than the investment in each capital component directly, in calculating the investment in human capital, the formula can be amended in a way that it reflect the investment in human capital compared to the value added of the firm. This is identified as an alternative approach in utilising the same concept to study firms' investment in human capital than a major criticism to the approach.

Chen et al, (2005) adopting the value added intellectual coefficient model (Pulic, 1998 & 2000) revealed that firm's intellectual capital has a positive impact on firms' market value and financial performance, both current and future. Though firm's market value is positively associated with corporate intellectual ability and its two sub-component capital employed efficiency and human capital efficiency, results demand further analysis to be carried out aiming the individual intellectual capital component since stakeholders are placing different value on individual components, structural and human, than the overall intellectual capital efficiency. Another critique in terms of the application would be that, even though human capital is considered in this model from the human capital efficiency point of view, when it comes to investment in human capital of the firm, human capital to value added coefficient would rather have reflected the firms' investment in human capital as a portion of

total value added, which on the other hand even consider the distribution of firm value added among stakeholder category employees.

Referring to one of the prominent intellectual capital management framework Skandia Navigator (Edvinsson, 1997), Nazari and Herremans (2007) attempted to expand the VAIC model (Pulic, 1998 & 2000). The expansion of VAIC model has resulted in six coefficients to measure intellectual efficiency including; human capital, structural capital, overall value creation, customer capital, innovation capital and process capital efficiency. Though researchers wanted these efficiency measures to be tested for the impact of the value creation efficiencies, it's yet to be done in differing context (Nazari and Herremans, 2007).

However, evidence indicates that VAIC model (Pulic, 1998, 2000) has generated mixed results in different contexts, as Chan (2009a and b) revealed an overall lack of association between intellectual capital and financial performance in the Hong Kong context. Not even the analysis through breakdown provided any statistical support for the relationship between efficiency indicators and organisational performance (Chan, 2009b). The negative association between human capital efficiency and productivity and human capital efficiency and market valuation indicate that the higher the human capital efficiency, (i.e. higher value added to human capital ratio) the lower the productivity and the lower the market valuation. The results imply that when firms portion of value added distributed to the employees is lower, it results in lowering the productivity market valuation. In other words, lower investment in human capital result in lowering the firm productivity and market valuation. Though researchers claim that value added per human capital represent firms human capital

efficiency, the fact that firms motivation to spend less tend to make the coefficient high, it's questionable whether this measure actually reflect the firms investment in human capital as it should be. However, this indicator warrants further examination of the subject as this reasoning might arguably vary in different socio-economic contexts.

Investigating the impact of firm intellectual capital on general productivity, Chen et al. (2014) revealed that firms' investment in intellectual capital measured in terms of value added intellectual coefficient (Pulic, 1998 & 2000) and even its' individual components have generated significantly positively result under developing economy situations. The results revealed that Malaysian general insurers should pay attention to intellectual capital efficiency including their management skills. However, the results have only been able to generalize to the general insurer firms and the regulated nature of the industry, since the industry is regulated by the central bank of Malaysia, in addition to the accounting and financial regulations. This may have had impact on the results.

According to the method of conceptualising human capital based on value added intellectual coefficient model (Pulic, 1998 & 2000), the initial measurement has been derived for human capital efficiency using the formula, value added divided by the human capital of the firm. However, from human capital investment point of view this creates a contradictory argument implying that, in order to increase the human capital efficiency firms should invest less in the employees of the firms unless if it's assumed that the firm value added as well proportionately increase with the investment in human capital of the firm. Therefore, opposed to the human capital

efficiency as a part of intellectual capital efficiency, conceptualisation of firms' investment in human capital could be achieved considering the portion of human capital to total value added, as employees are the true value creators.

Moving away from the individual perspective of calculation of human capital of the firm as that of individuals and aggregating them to represent the human capital or intellectual capital of the firm, Flamholtz (2005) has suggested another approach attempting to capture the economic value of the human capital of third kind (i.e. the corporate culture). This study has proposed that there are three distinct and related components of economic value of human capital in firms termed as, (1) the value of individual competencies, (2) the (incremental) value of synergetic terms of people in relatively small groups and (3) the (incremental) synergetic value of the human organisation as a whole as distinct from the value of the other two components (Flamholtz, 2005 p.79). The study revealed that the human capital of third kind (corporate culture) could be measured and most importantly it has a statistically significant impact upon financial performances. As a result, the incremental value of synergy of human organisation as a whole has been taken in to account under the company's cultural paradigm that is "…the way we treat our people affects the way our people treat our customers, and intern, our success, which includes financial performance" (Flamholtz, 2005, P. 82).

Since human capital of third kind possesses a significant impact on the organisational performances, it's imperative to recognise the firms' investment in employees via existing accounting and financial reporting system even though quantification it self would not be sufficient to cover this aspect. Therefore,

accounting and financial reporting recognition of firms' investment in human capital through quantitative and qualitative disclosure in addition to the monetary parameters, in a way that the firm value creation is reflected may have a vital role to play in this scenario.

2.3.4 Human capital accounting to disclosure

The failure to diffuse many of the academic methods developed for accounting recognition of firms' investment in human capital, has lead researchers to look at the old problem in a new light, proposing a paradigm shift (Roslender and Dyson, 1992; Roslender, 1997). "Shifting away from the narrow economic-accounting perspective of the past to a broader social scientific perspective" the previous attempts of putting people in the balance sheet has been diverted to generating softer accounting information (Roslender and Dyson, 1992, p. 311) with further researchers emphasising that the accounting and financial reporting recognition of investment in human capital via disclosure impact the decision of financial statement users including managers, investors and other stakeholders (Flamholtz, 2005).

As a consequence, many qualitative studies (Ax and Marton, 2008; Abeysekera, 2008; Flamholtz, 2005; Maher, 1996) have been undertaken parallel to the quantitative studies (Flamholtz et al., 2004). Maher (1996), in determining the extent to which management attempt to account for their human resource management practices of hotel industry through a qualitative analysis discovered that very little attempts have been made to formally evaluate the cost and benefit of different

human resource management practices. Further, the analysis revealed that the hotels do not use human resource costing and accounting information in a formalised way to evaluate their investments in trainee managers. However, there has been certain indication to say that the current picture is changing. The study further proposed that a "business like" approach needs to be adopted to the management of people if they are to gain any credibility at strategic level. Further, the analysis concluded that "in order to evaluate the human resource management decisions not only human resource people need to familiarise themselves with accounting practice but they also need the support to setup information systems that will enable them to identify the outcomes of specific human resource investments" (Maher, 1996 p. 31). "If you talk to the majority of personnel people, they don't get involved in the profitability of their business… and to me that's a must. I think they should be numerate, they should understand business accounting and should understand the effect that their action can have on that business" was one of the quotation highlighted in the data analysis in Maher (1996). This statement clearly emphasise how human resource management is linked with the financial performances of the firms thus, the importance of accounting and financial reporting recognition of investment in human capital from different stakeholders' point of view. Moreover, the same study highlighted the vital importance of linking human capital accounting and related information with the employee performance in a more formal way, as to reflect the value created by the employees of the firm.

Empirical evidence so far have highlighted that investment in human capital by the firms is vitally important in many aspects including firms' market and non market performance parameters (Schultz, 1961; Chen et al., 2005; Lajili and Zeghal, 2005b

& 2006; Dumay and Tull, 2007; Holzer, 1990; Blundel et al., 1999). However, the current accounting system still haven't developed or proposed any mechanism to account for this investment by the firms (Roslender and Stevenson, 2009; Roslender et al., 2004). Since accounting for the investment in human capital has not been mandatory, firms have attempted to recognise the firms' investment in human capital in an alternative way via voluntary financial reporting practice as a part of corporate reporting mechanism of the firm. Moreover, the accounting and financial reporting recognition of investment in human capital via voluntary reporting as well have been the subject under investigation over several decades. Therefore in the following section, literature relating to the corporate reporting and information disclosure mechanism in general, disclosure categories and human resources disclosure in particular are critically reviewed paying attention to the reasoning behind and the consequences expected under financial recognition of investment in human capital via voluntary disclosure.

2.4 CORPORATE REPORTING

Given the limitation that all operational and financial aspects are seldom covered through the set of financial statements prepared periodically, financial accountants and reporters tend to provide additional information which might be useful for stakeholders' decision-making (Kinney and Libby, 1999). Over a period of time, the financial experts are practicing and enhancing this (Kinney and Libby, 1999; Baker and Wallage, 2000) with the intention of filling the gap between the market value and the book value of the firms (Edvinsson, 1997). This is done via discretionary

release of financial and non-financial information of descriptive, quantitative and mostly qualitative nature, through the external financial reporting in annual reports, prospectus and other sources over and above the legal, professional and regulatory requirements of firms (Barako et al., 2006). This movement to new level of accounting has even demanded a paradigm shift, which has occasionally been quoted as “the need for future accounting” (Edvinsson, 1997, p. 367) in order to satisfy the demand for such information (Baker and Wallage, 2000).

The problem of information asymmetry as well, is addressed via the financial reporting practice (Verrecchia, 2001). As an example, research evidence has revealed that the voluntary disclosure is negatively associated with the proxies for information asymmetry implying that disclosing more information lowers information asymmetry (Lev, 1988; Petersen and Plenborg, 2006; Leuz and Wysocki, 2008) though that was not the only motive of financial reporting. Further, the enhanced reporting by means of adopting new or developed accounting standards have minimised the problem of information asymmetry as well (Barako et al., 2006; Zhou, 2007; Leuz and Verrecchia, 2000). However, sometimes, there have been contradictory arguments as well indicating that; corporate management is usually opposed to the additional disclosure of financial information. It is reported that managers prefer financial reporting as long as their remuneration varies proportionately with respect to the financial information reported, which might result in a positive bias in reporting; whereas, owners prefer financial reporting as long as the reporting is unbiased (Ng, 1978).

Empirical studies on financial reporting practice are reported from developed countries (Abdolmohammadi, 2005; Smith et al., 2005; Bukh et al., 2005; Collett and Hrasky, 2005; Dumay and Tull, 2007; Subbarao and Zeghal, 1997) and lesser-developed countries (Barako et al., 2006; Wang et al., 2008; Abeysekera and Guthrie, 2005; Abeysekera, 2010 & 2008). However, the attributes highlighted by developed countries have in certain instance been different from what's highlighted by lesser-developed countries (Abeysekera and Guthrie, 2005). Evidence on voluntary information disclosure is found related to many geographical regions including Asia pacific region (Australia, Singapore, Philippine, Hong Kong, Thailand, Indonesia and Malaysia), European countries, African countries etc. though international comparative studies have mostly been limited (Subbarao and Zeghal, 1997; Williams, 1999).

2.4.1 Regulatory framework of corporate reporting

As the key accountability and reporting stewardship mechanism limited liability companies are legally required to produce and publish annual reports and accounts (Stittle, 2004). The content and the intensity of this reporting is governed either by international financial reporting standards or governing bodies, domestic or local accounting and financial reporting standards or governing bodies and even the legislative framework such as companies' act of the respective countries (Holland and Foo, 2003). While companies acts provide the general framework for financial accounting and reporting, particularly stipulating basic minimum requirement, respective accounting bodies and regulatory institutes of individual countries such as

central bank, institutes of chartered accountants, security exchange commissions, and the international and local accounting standards and reporting boards act as supplementary sources (Barako et al., 2006; Chen et al., 2014). Moreover, formal development of regulatory frameworks relating to financial reporting has been pushed even by the wave of corporate accounting scandals took place in the recent past. The Sarbanes Oxley Act of 2002 (SOX) has introduced major regulatory initiatives for overhauling the financial reporting and corporate governance system (Rezaee, 2005). As an example, remedies such as principles-based financial reporting standards embedded through SOX have aimed at improving the US financial reporting.

A study conducted comparing the financial reporting standards in US concluded that, "financial statement preparers are less likely to report aggressively when applying a less precious financial reporting standards than when applying a more precious financial reporting standards. (Agoglia et al., 2011, p. 749). In certain instances, researchers have revealed that, despite the availability or intensity of legislative frameworks, firms voluntarily include more rich and even stand-alone reports covering different aspects of corporate reporting. As example, Holland and Foo (2003) assert, "even though environmental legislation in UK is not as considerable as that of the US, more companies in UK produced stand-alone reports and or included a separate environmental section than US companies" (p. 10). Considering the importance and the rewards for disclosure, some of the aspects such as corporate governance have later been identified as part of the compulsory or mandatory reporting by certain sectors (Barako et al., 2006; Zhou, 2007; Leuz and Verrecchia, 2000). As an example, corporate governance reporting have been promoted via The

UK corporate governance code (Financial reporting council, 2010), the code of corporate governance for banking and financial institutions issued by the Central Bank of different countries. As example, Bank Supervision Department of Central Bank of Sri Lanka, 2008 and Kenya via the Centre for Corporate Governance (Barako et al., 2006).

Implementation of international financial reporting standards (IFRSs) covering the regulatory frameworks and disclosure requirements, which is compulsory for listed firms that belong to member states of European union since 1st January 2005 has been understood as another major move on corporate reporting (Iatridis, 2008). It's evidenced that emerging nations have been early adopters to IFRS in order to gain advantages such as the legitimacy in global market, access to capital market, achieve economic development and increase the firm wealth. Whereas, UAE (Middle East and North Africa) has adopted IFRS as a result of the pressures such as regulation regimes of the World Bank and multinational corporations, the international accounting standards board (ISAB), big four audit firms, and relationships with nations trade partners (Irvine, 2008; Guler et al., 2002). Even though the three key regulatory frameworks; professional accounting bodies, states and financial service authorities, address firms' obligations on corporate reporting in general, either of them have consistently places little or no obligation on companies to report on investment in human capital (Stittle, 2004; Lajili and Zeghal, 2006).

Considering the accounting and financial reporting recognition of investment in human capital of the organisations, despite the researchers attempt to formalise the practice (Roslender and Stevenson, 2009; Grojer and Johanson, 1996 & 1998;

Roslender, 2009), no any specific treatments have been developed via legal framework of states, professional accounting bodies or the financial service authorities (DTI, 2003a and b). In addition, neither of them have made any compulsory procedures except for revealing the accounting procedures and information relating to remuneration and staff cost, retirement benefits, etc. under notes to the accounts. However, there have been instances where human resources is disclosed voluntarily as part of key performance indicators (KPI) to achieve strategic competitive advantage under some intellectual capital management frameworks such as Skandia navigator (Edvinsson, 1997) and Balanced Scorecard (Kaplan and Norton, 1992). Researchers have studied the voluntary disclosure of Human resources related KPIs to determine the performance of organisations in managing and utilising their human resources, and revealed that there is a significant relationship between managing and the disclosure of the human resource performance indicators (Cuganesan, 2006; Becker et al., 2001; Boedker et al., 2004).

In the absence of a proper regulatory mechanism, investment in human capital in some ways share similar considerations with investment in research and development, intellectual capital, environmental concerns and corporate social responsibility. They are similar in ways such as they all generate benefits over a period of time reflecting an investment while treated as an expenditure under accounting, they all proved to be valuable piece of information for stakeholder decision making, they are all have claimed the accounting and financial recognition via voluntary disclosure (Mills and Gardner, 1984; Wyatt, 2005; Wilmshurst and Frost, 2000; Williams, 1999; Wang et al., 2008; Roberts, 1992; Rizk et al., 2008; Rahaman et al., 2004; Entwistle, 1999; Ehie, and Olibe, 2010; Holland and Foo,

2003). Voluntary information disclosure has mostly shared common theoretical frameworks. Therefore, the section corporate reporting has evaluated empirical evidence on, accounting and financial reporting recognition via all the above-mentioned information disclosure categories.

2.4.2 Categories of Information Disclosure

With traditional bottom line reporting (financial aspects highlighting the difference between revenue and expenses to arrive profit or loss) was replaced by the triple bottom line reporting (adding two more concerns, social and environmental to the economic aspect of firms), accounting and financial reporting process was expanded to recognise most of the social and environmental performance of the firms in firm annual reports (Elkington, 1997; Henriques and Richardson, 2004). Most of the expanded categories of disclosure belong to the two additional aspects under triple bottom line reporting. Therefore, implications on accounting and financial reporting recognition of each and every component are reviewed below.

2.4.2.1 *Disclosure of general information*

Provision of any additional information by corporations to get the attention of the stakeholders including aspects such as general outlook of the economy, mission and vision, history, organisational structure/chart, contribution to the national economy,

current business strategy, likely effect of business strategy on current performance, objectives of the corporation and marketing related information; comes under the general information disclosed by firm (Barako et al., 2006; Wang et al., 2008; Cooke, 1989). Provision of these information serves the purpose of reducing agency cost, agency risk and information asymmetry since annual reports provide the means of a credible and reliable communication between the managers and the other stakeholders of the firms aiming to boost stock price (Barako et al., 2006; Graham et al., 2005). Regarding the human capital related attributes under general information, firms in many countries are charged with providing the national minimum information on employees of the organisation (Roslender and Stevenson, 2009) while the amount disclosed varies depending on many reasons including firm management practices (Ax and Marton, 2008).

Assessing the extent and the determinant of voluntary corporate disclosure, Cooke (1989), studied a sample of annual reports of 90 firms (unlisted 38, listed in Swedish stock exchange 33 and listed in Swedish stock exchange and at least one foreign stock exchange) selected using stratified random sampling technique out of 2000 firms. The study used a 146 item disclosure index developed by careful scrutinizing the items recommended via regulatory frameworks and previous studies by three Swedish practicing accountants. Disclosure items had been categories under additional information related to financial statements, information related to measurement and valuation methods, ratios, statistics and other details (including information related to labour market, capital market, employees and directors), projections and budgetary disclosure, other social responsibility disclosure and financial history. The simple valuation criterion disclosure (1) and nondisclosure (0),

is used to measure the disclosure to calculate the aggregate disclosure index. However, inability to capture the extent and meaningfulness of disclosure has been the major limitation. The fact that, listing states have been proven as single most important variable relating to the impact of voluntary disclosure, the practice has been proven tremendously important for listed firms and firms listed in at least one foreign stock exchange.

Botosan (1997), using the disclosure ranking produced by the Association for Investment Management and Research (AIMR), discovered that the higher level of disclosure of public listed firms result in lower cost of equity capital. The results have implied that increase in disclosure reduces the information risk while increasing the stock market liquidity, which ultimately resulted in a lower equity capital. According to the results, due to the lower cost of equity capital, with increasing amount of disclosure firms may obtain the advantage of reinvestment in valuable assets including even human resource assets of the firms. However, further analysis failed to find evidence for association between the disclosure level and the cost of equity capital for firms with a high analyst implying that disclosure measure being limited to annual report may not have reflect a powerful proxy for the purpose. Having sufficient cross sectional variance and sufficient sample size was the criteria behind sample selection. However, sample has been limited to manufacturing industry making the results less generalizable in interpretation.

Exploring the determinants of corporate financial reporting in light of the agency theory, Barako et al., (2006) studied; the extent to which corporate governance, ownership structure and firm characteristics, affect the voluntary disclosure practice

of firms. The study used multiple regression analysis of panel data gathered from annual reports of Nairobi Stock Exchange of Kenya, covering the period 1992-2001. The voluntary corporate disclosure was quantified through a disclosure index using 46 disclosure items belonging to four categories; general and strategic information, financial data, forward looking information, social and board disclosure; scrutinised via professional and expert judgements. Even though the total number of firms listed in Nairobi Stock Exchange have been selected, subjected to the data availability only 43 firms have finally been in the sample. The significant positive relationship with corporate disclosure, revealed that many drivers of voluntary disclosure in developed countries such as portion of non executive directors, presence of audit committee, foreign ownership, institutional ownership, size and the debt of the firm; apply in the same way for the developing countries. However, the selection of all firm listed in a stock exchange would not have been possible considering very active and a comparatively larger stock exchange, where researchers may have to limit only to a certain category of firms or specific segment of listing (Botosan, 1997; Abdolmohammadi, 2005; Abeysekara, 2008).

Wang et al. (2008) has expanded the same approach to emerging market point of view by including Chinese listed companies who issue both A & B shares to study the determinants of voluntary disclosure as well as the impact of disclosure on company's cost of debt capital. The positive effect voluntary disclosure had from state ownership, foreign ownership, firm performance and the auditor type revealed that accounting and the financial reporting recognition of firm activities via voluntary disclosure are responsive to certain systematic influences. Choosing number of industries provide positive implications. However, capturing only the

disclosure verses non-disclosure and not the quantity and quality of reporting leaves a gap whether stakeholders are actually interested in the implications through the meaningfulness of disclosure.

A similar study was undertaken by Raffournier (1995) to address specific set of information relating to financial aspects of the firms covering different countries. Relying on agency and political economy of accounting theories, this study attempted to relate the extent of voluntary disclosure to possible determinants of Swiss firms. Results revealed that large internationally diversified firms tend to disclose more compared to small domestic firms. On the other hand, attempting to discover financial characteristics of firms disclosing accounting practice related information and assessing the financial impact of their motive in UK listed firms, Iatridis (2008) revealed that firms with larger size, growth and leverage measures, account for greater amount of disclosure while firms with detail accounting information tend to show higher profitability. Even though the results of corporate disclosure analyses tend to be consistent with each other and the theoretical framework justifying conceptualization, exclusion of banking, pension, insurance and financial sector firms may have accounted for limited generalizability of the findings.

2.4.2.2 *Disclosure on Corporate Governance*

Since “capital market participants expect vigilant and active corporate governance to ensure the integrity, transparency and the quality of financial information” (Rezaee,

2005, p. 277), firms tend to report more than the required minimum of corporate governance related information in external reporting (Baker and Wallage, 2000; Muranda, 2006; Mangena and Tauringana, 2007). Corporate governance is one of the most regulated types of information disclosed under corporate reporting based on some regulatory frameworks such as the UK corporate governance code (Financial reporting council, 2010). Even though the code of corporate governance has not yet been made mandatory, all most all the firms recognise corporate governance practice via voluntary disclosure. Moreover, employees being one of the many interest group of firm corporate governance mechanism, voluntary adherence to the corporate governance code appeared to have facilitated the accounting and financial reporting recognition of human capital investment to a certain extent.

Gompers et al. (2003) used the corporate governance index "G", to reflect the balance of power between management and shareholders in studying about the use of corporate governance mechanism to prevent practices such as proxy fights and hostile takeover. The construction of corporate governance index required adding 1 point for every provision that reduces the shareholder right. Results revealed that corporate governance practice is strongly correlated with stock return and implied that governance provisions have resulted in higher agency cost. In the absence of direct or indirect measure, a similar kind of indexing mechanism can be applied to proxy for corporate governance and other organisational practices or investment in human capital in particular (Mangena and Tauringana, 2007; Abdolmohammadi, 2005; Abeysekara, 2008).

Using seven corporate governance disclosure aspects, Collett and Hrasky (2005) explored the corporate governance disclosure by Australian companies. The results revealed four namely: (1) identification of particular board committees and their functions; (2) the structure of the board (with respect to non executive directors), how that structure contributes to the board's corporate governance functions, whether there is a code of conduct for members of the board, and how members of the board are selected and remunerated; (3) the position that the board of directors taken in general to corporate governance and to the increased focus on this area of corporate activity; and (4) functions of the board with respect to corporate governance; the most frequently disclosed corporate governance information. The positive association with firms' intention to raise equity capital has indicated that financial reporting recognition of corporate governance practice via disclosure is value relevant with respect to the shareholders and potential shareholders of firms. However, the findings failed to discover any value relevance of corporate governance disclosure from debt holders' point of view (Collett and Hrasky, 2005).

Adopting the same measurement criteria, non weighted disclosure index using the dichotomous basis; disclosure (1) or non disclosure (0) to report information disclosed in annual reports and the company websites, Samaha et al. (2012), revealed that good corporate governance practices of the firms result in a increase in disclosure on corporate governance. Moreover, addressing the same in a different setting (Post apartheid South African listed firms) longitudinally, Ntim et al. (2012) as well revealed that the voluntary disclosure has increased over a period of time and good corporate governance practices has resulted in increased corporate governance disclosure. Parum (2005) has linked corporate governance disclosure with the

openness and the transparency in how companies are managed, using the disclosure of corporate governance from strategic perspective as corporate governance statement. Hence, this study was restricted to the corporate governance statement in annual reports to perceive correctly about board of directors, board independence and the qualifications of them to handle strategic challenges it covers only a part of the corporate governance (Parum, 2005).

Studies on corporate governance have further been expanded to understand what types of firms disclose more on corporate governance (Mangena and Tauringana, 2007), why these firms tend to report, by looking at the motives for disclosure and the consequences of disclosure from different stakeholder point of view (Collett and Hrasky, 2005; Mendez et al., 2011). On the other hand, corporate governance attributes disclosed have also been studied as determinants for the other voluntary information disclosure categories (Eng and Mak, 2003; Barako et al., 2006) and control variable in determining the consequences of other voluntary disclosure aspects. Accordingly, the use of empirical evidence on corporate governance in this study is two fold. First, the methodological and conceptual justifications related to the accounting and financial reporting recognition of corporate governance via voluntary disclosure may provide justification on studying about firms' investment in human capital using voluntary disclosure as a proxy. Second, corporate governance practice itself act as some influential factor or determinant of firms' investment in human capital since corporate governance practice itself is aimed at multiple stakeholder interest including employees.

2.4.2.3 *Corporate Social Responsibility Disclosures*

Diffusion of corporate ownership and the multiple stakeholder involvement, made firms use some of their economic resources to aid some kind of social goals. This was particularly the case due to increasing significance in the influence firms exerting over the societal activities (Ullmann, 1985; Roberts, 1992) and the stakeholder demand in investment in social capital of the firm (Sikka, 2011). Firm's corporate social responsibility activities includes but not limited to environmental related activities, affirmative action programmes, equal employment opportunities policies, community involvement product safety, policies towards disadvantaged communities or regions, energy policies, social responsibility disclosure etc. (Roberts, 1992; Abbott and Monsen, 1979). However, considering the previous studies they have been considered either as a group or as a separate field. Therefore, even in exploring what firms voluntarily disclose with regard to the above is done treating them all in a single section as follows.

Abbott and Monsen (1979) undertook an initial study on corporate social involvement of fortune 500 firms using a self-reported social involvement disclosure scale as a proxy to reflect the firms' corporate social involvement. The study aimed at understanding the corporate social involvement of the firms, how they response to criticism and government pressure, analyze the dimensions of such corporate response and ultimately to analyze the relationship between the corporate social involvement and the corporate profitability. According, to the results, being socially involved appears neither increase investors total rate of return nor dysfunctional for the investors. Even though there are theoretical arguments to prove that there is a

high chance for firms who are highly involved in corporate social involvement not to reveal them in annual reports unless if they are directly related to firm value creation, they have still adopted the self-disclosure.

Firms' involvement in corporate social activities in certain instances has been claimed to be industry specific as well. As example, a study of corporate social disclosure in oil industry (Ness and Mirza, 1991) covering four areas of social disclosure namely: (1) product related, (2) employee related, (3) environmental related and (4) community related, revealed a positive association between the environmental disclosure in annual reports of the UK companies and the oil industry. In this study, though they have used the term corporate social responsibility, particularly the attention is given to the component environmental disclosure as a part of corporate social disclosure and the categories of disclosure has later been separated to analyse the environmental disclosure with the other corporate social disclosure which cover product related, employee related and the community related disclosures. The results revealed that the oil industry report more on environment than the other industries (7.856 times) and the disclosure being an environmental disclosure comparative to other disclosure in oil industry is higher (4 times) comparative to other industry (Ness and Mirza, 1991). Due to the significant nature of the environmental impact by the oil industry, the study categorised the firms based in oil industry vs. non-oil industry and the disclosure based on environmental disclosure and other social related disclosure to study the relationship using Pearsons' Chi-square technique.

The similar categorisation was adopted by Rizk et al., (2008), in discovering the corporate social and environmental reporting practice of Egyptian corporate entities. A 26-item disclosure index environmental, energy, human, customer and community related disclosures were initially adopted to rank corporations based on the disclosure practice. Results revealed a significant difference in reporting practice among the Egyptian corporations of nine industry segments covering nine high polluting industries (Rizk et al., 2008). Major limitations to this study include, considering variability only over industry membership and the form of ownership while firms' involvement in corporate social activities and the disclosure relies on many other factors. Moreover, ranking firms based on just disclosure or non-disclosure of the items in the index without considering what they have actually reported may as well be added to the limitations. Detail analysis of the results revealed that 8 out of 13 employee related items in the index were found significantly affected by the form of ownership. However, increasing disclosure on employees implied that Egypt as a developing country with a great desire to develop and use its human resources to raise the standards of living tend to recognise firms involvement in human capital development via voluntary disclosure, with even government owned entities disclosing more compared to publicly traded. This result further highlighted the importance of firms' attempts to recognise the investment in human capital in a more systematic way, implying that policy enhancement on accounting and financial reporting recognition perhaps is efficient in developing countries opposed to the great resistance against it in developed countries (Roslender and Stevenson, 2009).

Addressing methodological gaps on accounting and financial reporting recognition of corporate social responsibility related activities, Bouten et al. (2011) proposed a comprehensive reporting framework, by developing an enhanced content analysis framework, which capture the conceptualization of corporate social responsibility disclosure by considering three types of information namely vision and goals, management approach and performance indicators. The level of comprehensive reporting is measured as a portion of number of items for which all three information types mentioned above are reported to number of items reported by the firms. This cross sectional analysis prevent researchers obtaining an idea about the time lagged relationship with the disclosure types considered while a longitudinal sample would have addressed this issue better. Overlapping boundaries and the absence of a proper reporting framework parallel to the management framework have been understood to be the most common limitation leading to mixed or contradictory result under many of the above disclosure related studies. Hence, special attention is paid to understand management and reporting frameworks simultaneously so that the reporting frameworks will be enhanced based on the management frameworks. Moreover, the inclusion of more parameters such as corporate social responsibility expenditure, and involvement scores based on positive and negative implications of corporate social responsibility activities and inclusion of other control variables such as firm size, leverage, cash flow, Tobin's q etc. in regression analysis have enhanced the robustness of the study as well as the application of the empirical findings in different context (Lin et al, 2009; Deng et al., 2013).

2.4.2.4 *Environmental disclosure*

Holland and Foo (2003) examined recent developments in the environmental management practices and information disclosure to determine whether recent developments in environmental management and the regulatory frameworks have explained the disclosure of environmental information. Considering the results for most reported, least reported and the average length of reporting the results concluded that the environmental reporting practice of UK have favour the user requirement for comprehension and relevance which is yet need to be confirmed by the users themselves (Holland and Foo, 2003). The results revealed that among many other factors legal and regulatory context affect the accounting and financial recognition of environmental initiatives. However, the analysis was limited to a small sample size for one year and disclosure is measured as number of sentences and not the meaningfulness of what's reported. Moreover, the correlation between perceived importance of factors affecting environmental reporting from chief financial officers point of view with the actual environmental reporting practice as well justifies the fact that accounting and financial reporting recognition of firm practice via voluntary disclosure can be used as a proxy to reflect the respective practice (Wilmshurst and Frost, 2000). Moreover, researchers believe that "a disclosure model which reflects underlying management practice renders the organisation more transparent than one which require disclosure as a result of legislative pressure" (Holland and Foo, 2003 p. 16) which could be applied considering any category of information disclosure.

An international comparison of environmental and social accounting disclosure covering Asia Pacific region undertaken by Williams (1999) using the content analysis technique revealed that cultural dimensions and political and civil systems are significant determinants of disclosure variation across companies and nations. Considering the environmental reporting practice, Dixon et al. (2005) have revealed that it is important to promote generally accepted rule of principles concerning environmental accounting and reporting issues such as aspects are to be reported, indicators are to be used, collection and analyzes of relevant data, verifying reporting practice and guidelines for reporting to be adopted by accountancy bodies, academics and practitioners. From decision makers' point of view, this requirement has not just been limited to the environmental performance of the firms and equally valid for almost all the types of voluntary disclosure categories.

2.4.2.5 *Research and Development Disclosure*

According to Meyer and Rowan, (1977), "research and development is an institutionalised category of organisational activity which has meaning and value in many sectors of society" as well as a collection of actual research and development activities (p. 341). Considering the accounting treatment for research and development, according to both GAAP and IFRS, internal cost related to research phase of research and development are expensed as incurred, while only development cost could be capitalised only when technological feasibility (according to US GAAP) or technological and economic feasibility (according to IFRS) are established via the criterion specified (Ernst and Young, 2012). When firms

capitalise development cost, they still tend to feel the need for elaboration of the process and activities associated with the research and development undertaken evidencing positive association between intellectual asset recognised via research and development and the level of information disclosed voluntarily about them (Kang, 2006; Kang and Gray, 2011).

Moreover, increasing importance of technology-oriented companies has highlighted the question of whether their stock market value reflects their intangible research and development capital. Therefore, research and development has been identified as another aspect, studied to discover the value relevance to stakeholders as an intangible asset of firms (Chan et al., 1990; Chan et al., 2001; Entwistle, 1999). The results of the event study methodology on share price response to 95 announcements of increased research and development resulted in on average return even under earnings decline situations (Chan et al., 1990). Further analysis revealed that there is a positive abnormal return for increased research and development announcements in high technology firms; while increased research and development announcements for low technology firms generated negative abnormal return. The use of event study mechanism may result biased outcome since, managers tend to disclose timely information on research and development only when they expect the market to positively response on them and they may as well keep the information without making them public in situations where a positive outcome is unlikely. Moreover, the applicability of the same methodology for other aspects such as investment in human capital might be challenging as they explained rather year around or continuous practice compared to one-off investment announcements.

A rather holistic approach to study the firms' research and development involvement is adopted by Entwistle (1999) considering the involvement and perception of different stakeholders, practitioners and academics on firms investment in research and development and the use of these information while paying attention to the firms financial reporting recognition on research and development activities. The disclosure analysis concluded that financial reporting recognition of output category (actual and the potential outcome of the research and development expenditure including actual product development achievements, actual achievement beyond product development, potential achievements, and timing issues) has dominated the disclosure practice accounting for 63% to 86% in which achievement on product development, achievement beyond product development and potential achievement have been the most reported disclosure items. Moreover, substantial disclosure is observed in categories including input (product being researched and developed) and accounting and financial (comparison with prior year research and development spending) too.

On the other hand, the results of interviews provided empirical evidence for trade-off of cost of revealing proprietary information with the resulting benefits in research and development investment context, revealing that considerable portion of executives are very concerned about the potential negative effect of the research and development disclosure. Moreover, majority of the executives (19/21) agreed that their firms would reveal bad research and development news to the market. The remaining two accepted that their firms also would disclose bad research and development news only if, it had to do so. This implies that financial reporting recognition via voluntary disclosure of firm research and development involvement

act as a true proxy measure to reflect the actual firms involvement even under adverse economic conditions, which could be applicable even for different types of intellectual capital development. However, research has been limited to technology intensive firms including technology hardware (hardware), software development (software), biotechnology/ pharmaceutical (biotech) stocks (Entwistle, 1999) making the generalizability of the findings limited. The results would have been enriched if researchers have attempted to incorporate the total amount of research and development expenditure too as a proxy to represent the firms' investment in research and development activities.

Since US firms fully spend the research and development expenditure, Chan et al. (2001) examined whether stock price fully value the research and development expenditure. The results of this study revealed that the companies with high research and development to equity market value earn large excess returns while research and development intensity of the firms was positively associated with the return volatility. However, the evidence did not support a direct link between research and development spending and the future stock returns (Chan et al., 2001).

Through the literature review on different disclosure aspects, it is evidenced that in the absence of mandatory procedure to account for different types of firm activities, researchers and practitioner's have aimed at the accounting and financial reporting recognition of them via voluntary practices. With clear background information on disclosure in general and covering different categories disclosed in the annual reports, it is essential to narrow down towards human capital disclosure in particular. In this case however, the human capital can not be taken in isolation as it has been

identified as the value creator of the intellectual capital of the firm (Edvinsson and Sullivan, 1996; Stewart, 1997) thus the management of the intellectual capital by firms have had a greater influence over the creation of human capital and the other components of intellectual capital (i.e. internal and external capital) of the firms. Therefore, the next section of the literature review discusses intellectual capital management as well as the disclosure with particular emphasis on human capital.

2.5 INTELLECTUAL CAPITAL MANAGEMENT & HUMAN CAPITAL

Different authors have defined intellectual capital in variety of ways. According to Edvinsson and Sullivan (1996) intellectual capital is "Knowledge that can be converted in to value" (p. 358). Stewart (1997) defines intellectual capital as "the intellectual material knowledge, information, intellectual property experience that can be put to use to create wealth" (p.10). According to both these definitions, intellectual capital represents the 'intangible wealth' of an organisation. Further, intellectual value is considered as the economic value of two categories of intangible assets of the firms' structural and human capital. Human capital refers to the employee dependants such as employee competence, commitment, motivation etc. (i.e. the heart of creating intellectual capital) and structural capital refers to the firms' innovative capital, relational capital and organisational infrastructure etc.. Since the portion of intellectual capital is not accounted for in accounting system, Abeysekara and Guthrie (2005) have termed intellectual capital as "a form of 'unaccounted capital' in traditional accounting system" (p. 151). Intellectual capital or intellectual assets are generally intangible in nature; while it is becoming widely accepted as a

major corporate strategic asset, which is generating sustainable competitive advantage for the firm. The rapid technological change, emergence of knowledge workers, increasingly sophisticated customers and innovations have highlighted the importance of Intellectual Capital in comparison with physical and financial capital (Petty and Guthrie, 2000; Ordóñez de Pablos, 2002).

Development of intellectual capital creates value for firms, even though majority of the value created are intangibles, which is not represented on the balance sheet of the organisations (Stewart, 1997). As a result, firms are mostly valued few times their book value, i.e. the financial capital. This implies that there is a hidden value in such companies that is not visible in the traditional accounting system. Yet it's precisely in these hidden assets that major investment for the future are made. It should further be noted that intellectual capital is not a new concept, that it has been addressed several decades ago. In fact, what is most essential is proper management of intellectual capital by firms in order to achieve a sustainable competitive advantage.

2.5.1 Managing and Accounting for Intellectual Capital

Managing intellectual capital is about managing knowledge and leveraging human capital of the firm to create value for it (Edvinsson and Sullivan, 1996). Therefore, firms have adopted several frameworks and models for this purpose (DTI, 2003a). Since there is no room and guidelines to measure and account for intellectual capital with in the available regulatory framework, researchers and practitioners tend to develop and adopt a variety of frameworks voluntarily. Balanced Scorecard (Kaplan

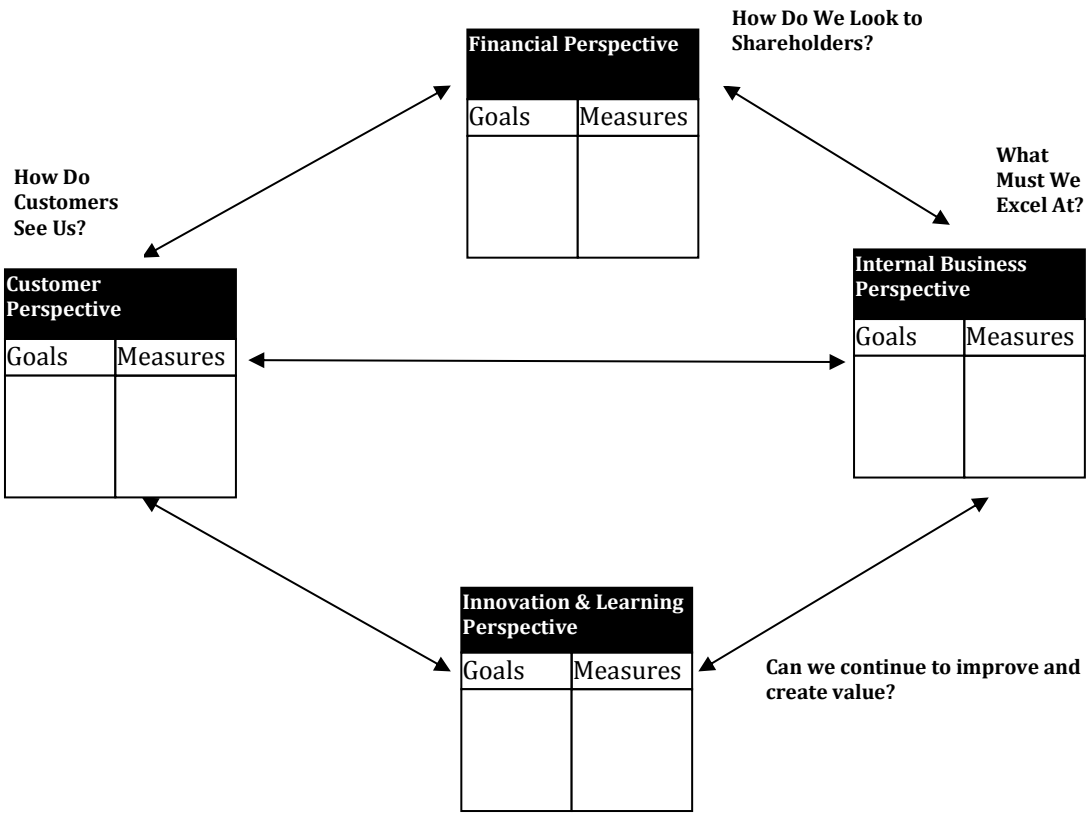
and Norton, 1992), human resource scorecard (Becker et al., 2001), intangible asset monitor (Sveiby, 1997), Skandia Value Scheme and Skandia Navigator (Edvinsson and Malone, 1997; Edvinsson and Sullivan, 1996), Tableau de Bord (Epstein and Monzone, 1998; working paper by Chiapello et al., 2001; Pezet, 2009), Value Chain Scorecard, Danish Intellectual Capital Statement (Holmen, 2005) and several other intellectual capital indices, have been identified as some prominent intellectual capital management and reporting frameworks among many others (Edvinsson, 1996 & 1997).

2.5.1.1 *Balanced Scorecard (Kaplan and Norton, 1992)*

Balanced scorecard is identified as "a set of measures that give top managers a fast but comprehensive view of the business" (Kaplan and Norton, 1992 p. 71). Even though the original intent of Balanced Scorecard is not to measure intangible asset, it may alternatively be used to measure intangible asset and can be applied for proper management and better performance of the intangible assets (Holmen, 2005; Minonne and Turner, 2009). As it's illustrated in Figure 2.02, it provides answers to the four basic questions: (1) how do customers see us? (customer perspective); (2) what must we excel at? (internal business perspective); (3) can we continue to improve and create value? (innovation and learning perspective); and (4) how do we look to share holders? (financial perspective) (Kaplan and Norton, 1992, p. 72). The balanced scorecard has been developed to answer the problems of inadequacy in existing performance measurement system and also to make traditional financial measures more relevant. Since it "complements the financial measures with

operational measures on customer satisfaction, internal processes, and the organisation's innovation and improvement activities-operational measures that are the drivers of future financial performances" (Kaplan and Norton, 1992, p. 71), it has been identified as a tool to optimise the management of intellectual capital of the firms too.

Figure 2.02: Balanced Scorecard



Source: Kaplan and Norton (1992). The balanced scorecard – measures that drives performances, Harvard Business Review. Vol.70, pp. 72.

Balanced scorecard becomes imperative in human capital management and accounting as it links the above mentioned four perspective in a way that provides a

holistic picture on firm value creation, which can be used in developing frameworks for financial reporting recognition of firm practices. This is particularly true since employee related aspects are easily grouped around the perspectives and linked with the firm performances, while the base of human capital development is represented through the perspective learning and growth, (Bontis et al., 1999). This has further been emphasised via human resource scorecard developed by Becker et al. (2001) based on the balanced scorecard (Kaplan and Norton, 1992), which identify the importance of aligning the human resource management and measurement with the strategy of the organisation in a way that firm value creation is reflected.

Chareonsuk and Chansa-ngavej (2008) has also refined the strategy map concept of the Balanced Scorecard approach for use in intangible asset management. This approach comprising two phases made it possible to identify intangible assets and further, it establishes the course and effect relationship between the intangible assets with various financial performances. Therefore, it provides for the control of intangibles while simultaneously monitoring the financial results. Even though balanced scorecard was identified as the dominant concept and most commonly cited framework, Marr and Schiuma (2003) criticised it based on the information gap in terms of the theoretical foundation. Moreover, Sveiby (2010) argued about the difficulty in application of the method in real world by emphasising the fact that balanced scorecard produces enormous amount of data making it difficult to communicate and evaluate. Despite the above critiques, since balanced scorecard is more than just a tactical and operational connected to the strategic vision of the firms its understood to be one of the best approach amalgamating the human capital management with accounting and financial reporting recognition of human capital

investment (Minonne and Turner, 2009). Proving that, accounting for people report of the taskforce on human capital management as well suggested that balanced scorecard aligns the evaluation of human capital to the companies strategic aims under four aspects: financial success, customer success, operational success and the learning and growth of the firms (DTI, 2003a) making is suitable to capture the accounting and financial reporting recognition of firms' human capital investment.

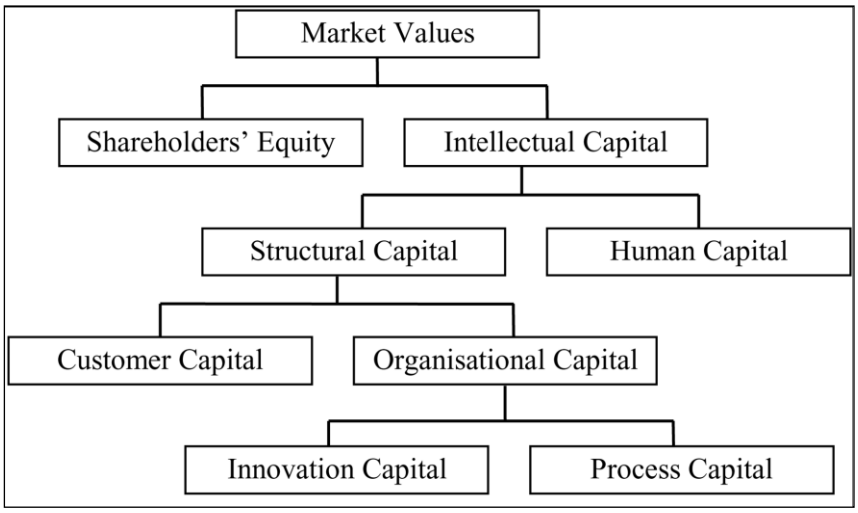
2.5.1.2 *Intellectual Capital Reporting and Intangible Asset Monitor*

An early attempt to develop a model for Intellectual Capital reporting was introduced by Brooking (1997) through classifying Intellectual Capital items into four Intellectual Capital categories: (1) assets which give the firm power in market place (trade mark, customer loyalty, repeat business); (2) assets representing property of the mind such as intellectual property (patent, trademark, copyright); (3) assets which give the firm internal strength (corporate culture, management and business process, strength derived from IT systems); and (4) assets derived from the employees of the firm (knowledge, competence, work related know-how, networking capability) (Brooking, 1997). The overlapping nature of the boundaries of this categorisation has restricted the use of this methodology in the subsequent studies and researchers have paid more attention towards the value creation perspective of intellectual capital.

Edvinsson and Malone (1997), has became an original contributor in developing an intellectual capital framework, which has subsequently been used by many

researchers (Huang et al., 2007; Nazari and Herremans, 2007; Tan et al., 2007 & 2008). In fact, the framework developed through the Skandia Value Scheme (Figure 2.03) has provided researchers new insights to debate. According to the Scandia Value Scheme, intellectual capital is initially classified into human and structural capital. Human capital represents employee dependants. On the other hand, structural capital includes customer and organisational capital representing the external and internal focus of structural capital. Organisation capital has further been classified into innovative capital and process capital. Process capital represents the know-how including manuals and best practices of the company while innovation represents things which create success in future such as intellectual asset and intellectual property. Ultimately, intellectual capital is comprised of four components namely human capital, customer capital, innovation capital and the process capital (Edvinsson and Malone, 1997).

Figure 2.03: Skandia Value Scheme



Source: Edvinsson and Malone (1997) Intellectual Capital: Realizing Your Company's True Value by Finding Its Hidden Brainpower, Harper Business, New York.

Roos et al., (1997) has classified intellectual capital in to structural and human capital based on the concept thinking and non-thinking assets, where human capital is clearly recognised as the value creator of the rest of the types of intellectual. This classification is almost the same as the initial part of the Skandia Value Scheme (Edvinsson and Malone, 1997) but broader in scope since both internal and external oriented intellectual capital excluding human capital is taken under the structural capital. This may be a weakness of this framework over the other specific frameworks (Roos et al., 1997).

The framework developed by Sveiby (1997) measures the intellectual capital of the firm as the difference between the market and the book value of the firm. This difference was explained via three interrelated families: human, organisational and customer capital, which subsequently became a de facto standard in terms of the applications. Sveiby (1997) has developed another framework to capture intellectual capital based on the strategic objectives of the firm to measure four modes of creating value from three classes of intangible assets. These three classes are labelled as: (1) people's competence (human capital), (2) internal structure (internal capital) and (3) external structure (external capital). Value creation modes are: (1) growth, (2) renewal, (3) utilisation/efficiency, and (4) risk reduction/stability (Sveiby, 1997). This classification is comparatively highly adopted by many of the researchers (Goh and Lim, 2004; Abeysekara, 2007; Abeysekara & Guthrie, 2004; Abeysekara & Guthrie, 2005; Murthy and Abeysekara, 2007) due to the simplicity as well as the less over-lapping nature in categorising the intellectual capital items.

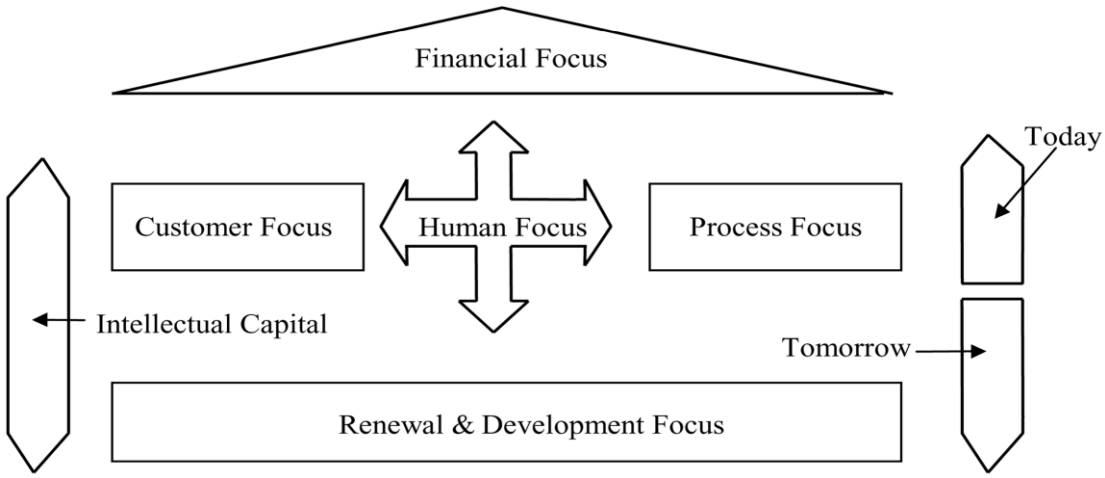
Moreover, in the absence of a standard framework with guidelines to capture the firms investment in intellectual capital, financial reporting recognition of intellectual capital investment via voluntary disclosure frameworks identified above has been widely adopted by firms and even researchers, and the use of a logical framework to categorise the intellectual capital investment has facilitated the usefulness of this information for decision-makers (Chen et al., 2005; Tan et al., 2007; Nazari and Herremans, 2007; White et al., 2007). The theoretical link established via intellectual capital management and reporting frameworks through the above methods have enhanced the validity of the findings as well as the usefulness of the information from different stakeholder perspective (Chen et al., 2005; Nazari and Herremans, 2007; Longo and Mura 2007; Sharabati et al., 2010).

2.5.1.3 *Skandia Navigator (Edvinsson and Malone, 1997)*

As reported by Edvinsson and Malone (1997) Swedish company called Skandia was leading the way in reporting the hidden intellectual capital of the business. They developed an important model called Skandia Navigator by combining the intangible asset monitor (Sveiby, 1997) and the balanced scorecard (Kaplan and Norton, 1992) for managing cum accounting and financial reporting recognition of intellectual capital. The navigator was designed to provide information on human, customer, process and renewal and development focus of the organisation. In terms of the applicability of Skandia Navigator as an intellectual capital management tool, it simply integrate and summarise all financial and non financial issues with the past and current performances into a balanced managing and reporting framework, which

has increasingly been used as a planning and follow-up tool. In this format financial, customer, process, renewal and development as well as human and the operational environment focuses are summarised together (Figure 2.04). Further, where and how intellectual capital fits particularly for knowledge organisations have also been supported by the findings of Edvinsson and Sullivan (1996). They have divided the component intellectual capital into two as human resources and structural capital (including intellectual assets). Out of these two, the human capital component cannot be owned by the shareholders where as, intellectual assets can be owned by the organisation. Therefore, for knowledge firms, it is always advantageous to transform innovations produced by the human resources in to a form of explicit intellectual asset, which can be owned by the entities. Accordingly, proper leverage between human capital and structural capital determine the success of intellectual capital management of firms (Edvinsson, 1996 and 1997).

Figure 2.04: Skandia Navigator

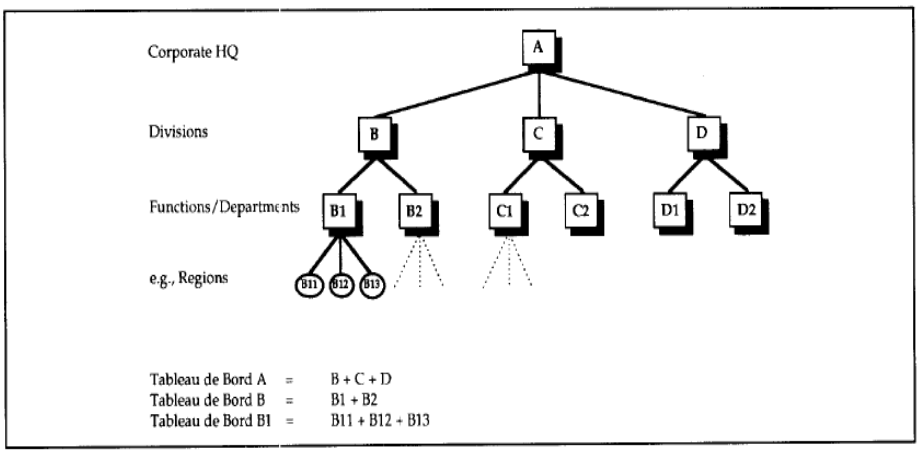


Source: Edvinsson and Malone (1997) Intellectual Capital: Realizing Your Company's True Value by Finding Its Hidden Brainpower, Harper Business, New York.

2.5.1.4 *Tableau de Bord*

Another framework termed Tableau de Bord was identified in France for management of information, which is also not limited to financial information. This concept, Tableau de Bord had been appearing in France even long before the emergence of the concept Balanced Scorecard (Epstein and Monzone, 1997; Geurny et al., as cited by Epstein and Monzone, 1998; Daum, 2005). This approach as well is a method of converting business strategies in to action plans, by way of cascading down performance of corporate head quarters to divisions, divisions to functions, departments and to regions etc. in a way that, the Tableau de Bord at each level works as a dash board (Figure 2.05), where employees can understand the relationship between actions and process performances (Geurny et al., as cited by Epstein and Monzone, 1998). The operational measures associated with the Tableaux de Bord determine the course and effect relationships even at divisional, functional or departmental and individual level as it is cascaded down in the diagram.

Figure 2.05: Nested Tableaux de Bord



Source: Geurny et al,. (1990) as cited by Epstein, M. and Monzone, J., (1998), Implementing Corporate Strategy: From Tableaux de Bord to Balanced Scorecards, European Management Journal, Vol. 16 No. 2, pp 190-203.

Critically reviewing the four tools available to measure and manage the intellectual capital including Human Resource Accounting, Economic Value Added, Balanced Scorecard and the Intellectual Capital, Bontis et al. (1999) concluded that, it is impossible to answer the question, which tool is best as there is no universally accepted norm. Therefore, these tools are claimed to be mostly context specific, where they are more or less appropriate for specific situations and companies. Thus, it is solely the management's responsibility to choose how to manage their intangible resources using the knowledge tool boxes presented in the study which compares the pros and the cons of each of the intangible management tools mentioned above.

Comparing the balanced scorecard with the Skandia navigator, it is possible to view the applicability of them in an alternative way since Skandia Navigator provides information of much more prospective nature being more futuristic as well while it's possible to view Balanced Scorecard retrospectively providing an alternative approach to the Skandia Navigator analysing mainly the current information but in a more detailed way aiming the future performance. The complete application of Scandia navigator being limited to one firm compared to the widespread application of balanced scorecard (Marr and Schiuma, 2003; Chareonsuk and Chansa-ngavej, 2008) and declining over the period implied that the framework has not been managed to reflect the intellectual capital of firm to external stakeholders in a more informative way. Moreover, while the application of the Skandia navigator by the firm, which introduced the concept declines, the use of balanced score card has become much popular in accounting and financial reporting recognition of firms intellectual capital and human capital investment particularly since the framework is capable of capturing and reflecting the firm value creation practice (Becker et al.,

2001; DTI, 2003a; Marr et al., 2004; Kaplan and Norton, 2001). On the other hand, tableau de bord is claimed to be the oldest among them, and even balanced scorecard is recognised as a welcome addition to the tableau de bord (Epstein and Monzone, 1997; Epstein and Monzone, 1998; Daum, 2005) though it has not been recognised as a model supporting accounting and financial reporting recognition of firms' intellectual capital investment. Ultimately, the development of the above mentioned intellectual capital management models particularly the models reflecting firm value creation such as balanced scorecard and value chain scorecard (Lev, 2001) have lead to a new paradigm of thinking. This has been reflected through the development and adoption of many intellectual capital management and reporting frameworks afterwards (Stewart, 1997; Holmen, 2005).

Careful review of intellectual capital management and reporting frameworks revealed that they are broadly similar but shows different interrelationships among the elements of intellectual capital, mostly differentiating human capital from non-human capital (Nerdrum and Erikson, 2001). However, in many instances interpretations given to each category of intellectual capital by different researchers may vary to a greater extent. This is illustrated via the comparison of four major frameworks highlighting the similarities and differences in table 2.01. Even though researchers have evidenced consistency between literature based expectations and empirical grouping (Huang et al., 2007) due to high variability in reporting intellectual capital by different firms, researchers have still failed to develop a set of guideline or a framework for accounting and financial reporting recognition of firms investment in intellectual capital (Guthrie and Petty, 2000).

Table 2.01: Comparison of Intellectual Capital Managing and Reporting Frameworks

Balanced Score Card Kaplan and Norton (1992)	**Skandia Navigator (Edvinsson and Malone, 1997)**	**Skandia value scheme (Edvinsson and Malone, 1997)**	**Intellectual asset monitor Sveiby, (1997)**
Internal process perspective	Process focus	Innovation and process capital	Internal capital
Customer perspective	Customer focus	Customer capital	External capital
Learning and growth perspective	Human focus	Human capital	Competence of personal
Financial perspective	Renewal and development focus		
	Financial focus		

2.5.2 Empirical evidence on intellectual capital disclosure

The analysis of empirical evidence on accounting and financial reporting recognition of intellectual capital investment suggests that many researchers (Guthrie and Petty, 2000; Petty and Guthrie, 2000; Striukova et al., 2008; Goh and Lim, 2004) have adopted Sveiby (1997) for the intellectual capital categorization. However, some other researchers have adopted combined approach to make the disclosure spectrum wider (Abdolmohammadi, 2005). Moreover, empirical evidence also have revealed that firms involvement in practice have increased over a period of time (Abeysekera and Guthrie, 2005; Abeysekera, 2007). Even though there have been several attempts to evaluate current issues and policy implications (Brennan and Connel, 2000;

Abeysekera, 2006; Roslender and Fincham, 2001) accounting and financial reporting bodies and firms are yet to come up with a standard framework governed by proper guidelines.

Due to the well-recognised nature of firms' investment in intellectual capital, Australian firms have become the subjects of intellectual capital studies over a long period of time (Guthrie and Petty, 2000; Guthrie et al., 2004; Abeysekera and Guthrie, 2005; Dumay and Tull, 2007; Woodcock and Whiting, 2009). As an initial attempt in empirical analysis of intellectual capital disclosure using rather exploratory content analysis technique, Guthrie and Petty (2000) descriptively analysed 24 intellectual capital items categorised based on Sveiby (1997) framework of internal, external and human capital. According to the results, external capital became the most reported followed by human and internal capital with equal percentage disclosure. Results further highlighted that, development of a model for intellectual capital disclosure is piecemeal and not widely spread having a long way ahead. Though Australian firms were regarded as best practice, authors suggested that a comprehensive framework to manage and account for intellectual capital is yet to be developed. Due to the limitations such as limited sample size, limited intellectual capital attributes and not considering what attributions are actually important from decision-makers point of view, the results rather explain the situation and provide a foundation for further study which focus on increased generalizability, validity and the decision usefulness on intellectual capital investment in different context.

Study on accounting and financial reporting recognition of firms investment in intellectual capital and its effect on market capitalisation for the period 1993-1997, (Abdolmohammadi, 2005), has combined several frameworks mentioned above (Brooking 1996; Sveiby, 1997; Guthrie et al., 2004). Analysis of reporting framework of 58 intellectual capital items under 10 broader intellectual capital categories, revealed that competency was one of the highly recognised item in annual reports being second only to brand while personnel was identified as a least reported item with research and development and proprietary process. This implies that there is a significant variance among human capital related disclosure them selves. Periodical analysis revealed that intellectual capital disclosure has increased over time, while there is an industry effect on disclosure except for personnel and proprietary process. Considering the economy sector old and new as well, there was a significant difference between intellectual capital categories: partnership, brand intellectual property and information technology. However, validity and the generalizability of findings were limited due to several limitations. Ignoring the subjectivism involved in analysing qualitative items and search for specific terms, counting the frequency under each item was adopted as data collection technique, which lead no implication on how the disclosure have recognised the actual intellectual capital development and the firm value creation. Moreover, increasing the number of main categories compared to initial models proposed (Brooking, 1997; Sveiby, 1997) and previous studies (Guthrie et al., 2004) make defining individual variables and codes difficult and complicated due to high overlapping nature of the categories.

Adopting the definition of Sveiby (1997), which classify intellectual capital into internal capital, external capital and employee competency, and the same research methodology as Guthrie and Petty (2000), Goh and Lim (2004) analysed the accounting and financial reporting recognition of intellectual capital investment via disclosure of top 20 profit making Malaysian public listed firms' by using 20 copies of year 2001 annual reports. The results revealed that Malaysian firms disclosed more on external capital followed by internal while human capital accounted for the least recognised category. Considerably low recognition of items such as general knowhow (15%), vocational qualification (10%) and education (10%) compared to work related knowledge and competency (80%) revealed firms' fear to take risk in developing general skills and recognise them as asset in general instead labour by recognising only work related attributes. Moreover, very limited recognition of attributes such as patent, copyright trademark implies that national or regulatory bodies' involvement on developing a proper framework has become an essential requirement. However, the results are not widely generalizable given the very small sample size.

Recognising the fact that accounting and financial reporting recognition of firms investment in intellectual capital has rarely been studied for developing countries (Goh and Lim, 2004); Abeysekera and Guthrie (2005) and Abeysekera (2007) have studied annual reports of 30 firms listed in Colombo stock exchange accounting for highest market capitalization for the two years 1998 and 1999 using frequency analysis technique of content analysis. While Abeysekera and Guthrie (2005) pay attention to discover voluntary disclosure on intellectual capital, using the framework of Sveiby (1997), Abeysekera (2007) comparatively interpreted the

findings with those of Australia (Guthrie and Petty, 2000) as well. 45 intellectual capital items adopted in Guthrie and Petty (2000) were classified under 3 broad categories: human (25), internal (10) and external capital (10). However, the wide spectrum of human capital information disclosed and high literacy rate compared to other developing countries, have attracted more attention to human capital category compared to the other developing country situation (Goh and Lim, 2004). The results revealed that there were slight deviations in individual items recognized within sub-categories, and between subcategories revealing that external capital was the most reported followed by human capital confirming the previous findings (Abeysekera and Guthrie, 2005; Guthrie and Petty, 2000). This variation was understood to be attributable to economic, social and political differences in the two countries Sri Lanka and Australia.

Despite not having separate intellectual capital reporting or theoretical framework compared to Australia, Sri Lankan firms evidence reporting a grate deal on human capital particularly employee relations implying the tendency to treat employees as asset instead labour or they may have either reflected economic social or political arrangements without necessarily directly reporting on intellectual capital elements. On the other hand, public pronouncement contrary to the importance could have been another reason for prominent recognition of intellectual capital in Sri Lanka. Sri Lanka being a predominantly Buddhist country with a culture associated with the concept of human person (Villacorta, 2006), the results may have lead researchers and practitioners to deviate attention more towards accounting and financial reporting recognition of human capital investment (Abeysekera, 2008; Vithana, 2009). The content analysis technique adopted in this study has taken rather

objective mechanism considering whether the items reported under each sentence are intellectual capital (1) or intellectual liability (-1) or non (0) from firm perspective. However, in a situation where accounting mechanism and potential financial impact is compensated via information disclosure, paying attention to what is reported, to what extent and how they contribute in the firm value creation process would have been a valuable addition to accounting researches.

Striukova et al., (2008) empirically analysed a wide range of reporting sources of 15 UK firms covering four different sectors for accounting and financial reporting recognition of the intellectual capital investment via voluntary disclosure. Unlike the dichotomous approach of disclosure (1) and non-disclosure (0) (Barako et al., 2006; Cooke, 1989; Samaha et al., 2012; Roberts, 1992; Rizk et al., 2008), or just the frequency count (Githrie and Petty, 2000; Abeysekera and Guthrie, 2005), this study measured disclosure considering the tone of disclosure: positive, neutral and negative as well as the size of disclosure measured in terms of the proportion of A4 page. The results of the study revealed that larger firms disclose more in intellectual capital investment compared to the smaller ones. Comparison between the industry sectors revealed that retail sector reported more followed by the pharmaceutical sector whereas, ITC/ software and estate and utilities sector disclosed low compared to the previous two. Irrespective of the industry sector, external capital was the mostly reported sector followed by human capital and the internal capital. Limiting the study to only four sectors make the results less generalizable, so does the use of an extremely lower sample size. However, it is questionable whether the measurement criterion used here is reflecting the actual value creation via

intellectual capital investment given it is not reflected via disclosing framework or the information considered in data collection.

In studying the accounting and financial reporting recognition of intellectual capital investment via voluntary disclosure in annual reports many firms adopted the manual method of content analysis (Abdolmohammadi, 2005; Abeysekara, 2007 & 2010; Guthrie and Petty, 2000; Guthrie et al., 2004) while other researchers (Sonnier et al., 2007) applied computer aided techniques to capture the information disclosure in the annual reports. Sonnier et al. (2007) using WordStat version 5.0 as the content analysis technique to capture 121 items of intellectual capital disclosed in annual reports under three categories: human, relational and organisational capital, revealed that intellectual capital reporting of the firms have had a negative impact from the firm performance parameters. The results implied that management might choose to increase more in intellectual capital disclosure to explain law performance matrix to compensate the failure of traditional accounting model of capitalising cost associated with the development of intellectual capital resource. The results justifying the use of voluntary disclosure as the way of recognising firms investment in intellectual capital. However, results were less generalizable as the study is limited to the high tech firms. Moreover, even though computer aided content analysis provided the advantage of improved more rapid verification of reliability and validity of categories, it is doubtful whether the actual value of the information disclosed reflecting the firms' investment in intellectual capital management is captured through the same technique (Bos and Tarnai, 1999). Hence, an in-depth analysis of the accounting and financial reporting recognition of intellectual capital investment,

to understand the role it plays in firm value creation will be a timely requirement for policy development and enhancement of firm practice.

Moving further from descriptive analyses, to understand the obvious variance in intellectual capital disclosure, researchers have extended the studies to explanatory analyses (Li et al., 2008; Li et al., 2012). Li et al. (2008) investigated the effects of corporate governance structure on intellectual capital disclosure of 100 UK fully listed firms of London stock exchange representing high intellectual capital intensive industries including pharmaceutical and biotechnology, IT, telecommunication, business services, media and publishing, banking and insurance, food production and beverage. Using the same sample and the methodology Li et al. (2012) did investigate the effect of audit committee characteristics on intellectual capital disclosure. Intellectual capital disclosure index developed using word count and percentage of word count assessing variety, volume and focus of intellectual capital attributes classified under three categories: human, structural and relational, developed based on Sveiby (1997) framework, is used as dependent variable reflecting the intellectual capital disclosure. The result of Li et al. (2008) revealed, greater percentage of independent non-executive directors has significant positive impact on overall intellectual capital disclosure as well as the human capital disclosure; whereas, share ownership revealed a significant negative association.

In the subsequent study, Lin et al. (2012) revealed that, overall intellectual capital disclosure is positively associated with the audit committee characteristics including committee size and the frequency of meetings while negatively associated with the audit committee directors share holdings. However, no relationship is observed

between audit committee independence and financial expertise. The results can only be generalised to intellectual capital incentive industries due to the limitation in sample selection and future studies can incorporate both high and low intellectual intensive firms using dummy type variable to control the effect. Moreover, the use of word count is advanced compared to the dichotomous procedure in scoring (Barako et al., 2006; Cooke, 1989; Samaha et al., 2012; Roberts, 1992; Rizk et al., 2008) even though the results may not be accurate as the writing style varies from one firm to the other making word count less robust measure to reflect actual meaning of the investment in intellectual capital. Intellectual capital being "individuals complementary capacity to generate added value" (Nerdrum and Erikson, 2001, p. 127), it is advisable to propose frameworks, which consider the meaningfulness of each attribute and how they actually create value.

2.5.3 Empirical Evidence on Human Capital Disclosure

Being the value creator, human capital plays a dominant role in firms' intellectual capital development, (Edvinsson, 1996 & 1997; Stewart, 1997). As a result, in every single framework discussed above, capital associated with employees has been identified as an important and a separate component and has given the terms human capital, employee competence etc. (Table 2.01). Though it's often stated in annual reports, that human capital represents the most important asset of firms, this is hardly supported by the items reported and measured in remaining sections of annual reports (Githrie and Petty, 2000; Abeysekera and Guthrie, 2005; Goh and Lim, 2004; Steen et al., 2011). As a result, a clear gap was observed between the recognition of

importance of human capital and the actual attempts taken by these firms to place human capital reporting on their agenda. Despite total human resources expenditure written off, accounting and financial reporting recognition of human capital investment as well is mostly limited to the voluntary disclosure in annual reports, thus researchers have diverted their attention towards voluntary disclosures (Abeysekera, 2008; Abeysekera and Guthrie, 2004; Subbarao and Zeghal 1997; Ax and Marton, 2008; Lajili and Zeghal, 2006 and 2005b).

An initial international comparison of human resource information disclosure using content analysis covering countries: USA, Canada, Germany, UK, Japan and South Korea revealed that there is a clear difference between the countries studied in terms of the incidence and word count of the information disclosure in their annual reports (Subbarao and Zeghal, 1997). Results of the analysis indicated that European firms disclose more on human resources than Asian and North American firms and there is a clear difference between financial services sector and manufacturing service sector. In this study, human resources disclosure is measured in terms of the incidence (frequency) and the word count (content), which is advantageous to the dichotomous approach. However, the extent to which human resource is directly linked with the mission, strategic direction and firm value creation reflecting human capital investment (Wintermantel and Mattimore, 1997; Roslender, 1997; Roslender and Dyson, 1992) could hardly be measured yet. The research sample covering both manufacturing and financial service sector from six different countries make the results more generalizable even though the small sample size from each country may question the validity of the results. Due to this, many subsequent researchers have

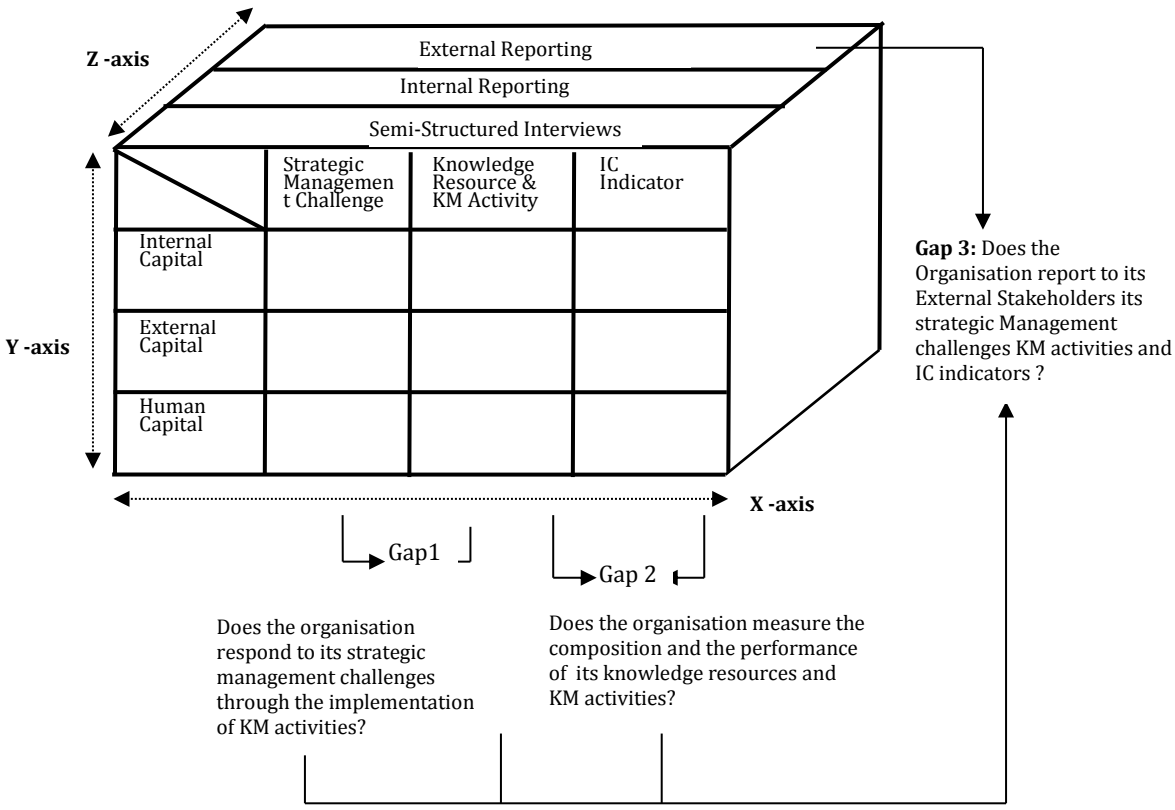
chosen larger samples covering individual countries (Abeysekera, 2008; Abeysekera and Guthrie, 2004).

Through a study conducted via content analysis of annual reports of 18 largest Swedish companies selected in terms of market capitalisation, addressing five elements of employee related information: education and development, equality, recruitment, selection of employees and comments by CEOs about personnel, Olsson (2001), revealed that non of the 18 companies in the sample revealed more than 7% of human capital information measured as a portion of total information. The spread of information in this study was narrower compared to the previous study (Subbarao and Zeghal, 1997) and many subsequent studies (Abeysekera and Guthrie, 2004) as well, suggesting further improvements in terms of the information coverage under empirical studies on recognition of firms investment in human capital via voluntary disclosure.

Through an investigation of the annual reports and semi structured interviews of Australian public sector firms, addressing the practice intellectual capital investment particularly considering the accounting and financial reporting recognition of human capital investment, Boedker, et al. (2004) highlighted that there are shortcomings of existing annual reports; thus the value relevance of the information disclosed in annual reports are declining. The study was facilitated by the intellectual capital value creation framework developed using the three criterion: categorisation based on type of capital, categorisation based on knowledge management activities and categorisation based on research method (figure 2.06). The data collection in this study involved semi structured interviews and content analysis of internal and

external documents, combination of which facilitates the triangulation of findings (Bechara and Van de Ven, 2011). Though it's time consuming its applicable only in case study situation covering a very small sample size. Relying on the results of interviews and the content analysis of internal and external documents researchers concluded that it is important to expand the existing reporting practice and incorporate information on composition and performance of organisations management challenges, knowledge resources and knowledge management activities, particularly the information about human capital.

Figure 2.06: Intellectual capital value creation framework



Source: Boedker, C., Guthrie, J. and Cuganesan, S., (2004). The strategic significance of human capital reporting in annual reporting, Journal of human resource costing and accounting, vol. 8 no. 2, pp 7-22

Since, many different factors might affect the practice human capital disclosure, Abeysekera and Guthrie (2004) further widened human capital disclosure content categories (25 item) in a way that it includes organisational process, culture and performance and financial related attributes as well in addition to just human resource functions (Olsson, 2001) (The list of items used in this study is given in appendix 1). This provided a tool to assess the type, amount and quality of human capital disclosure. Moreover, they applied these tools to a sample of annual reports covering 30 listed firms accounting for highest market capitalization in Colombo stock exchange for two years: 1998/1999 and 1999/2000. The results revealed a deviation from the studies carried out in developed countries in terms of overall reporting (Olsson, 2001) and the attributes mostly reported by firms (Guthrie and Petty, 2000; Guthrie et al., 2004; Abeysekera, 2007 & 2008) even though, the same technique was adopted. Comparison of the results with Australian studies conducted following the same duration highlighted the fact that the difference in frequency and extent of disclosure are attributable to the socio-cultural values of countries such that, entrepreneurial spirit has been highly valued in Australia compared to Sri Lanka. Moreover, results driven attributes such as value added is highly recognised by Sri Lanka; on the other hand, process driven attributes such as work related knowledge by Australian firms (Guthrie and Petty, 2000; Guthrie et al., 2004). Despite impressive results, methodology of the study can still be criticised given highly descriptive nature and the data collection model. As an example, even though wide categorization and line count facilitate type and the amount of disclosure in the annual reports to be captured, It’s hard or mostly impossible to capture the quality and the meaningfulness of reporting via sentence or line count.

Stittle (2004) argued that many attempts on human capital accounting in UK context are still limited to descriptive disclosure since, many of the regulatory bodies have limited their efforts on developing regulatory frameworks merely to qualitative, rather than quantification of investment in human capital to include in traditional financial statements. According to Stittle (2004), practical gap in moving ahead with accounting and financial reporting recognition of firms' investment in human capital arise mainly because of minimum involvement of regulatory bodies and legislation. Recent studies (Abeysekera, 2008; Ax and Marton, 2008; Gallhofer et al., 2011) seem to have had some prejudices in their minds at the outset biasing not to look into formal mechanisms to put people into the balance sheet. Stittle (2004) suggests that to remedy this, accounting regulations, state control and legislations should take heed of this regard to develop best practice guidelines for firms to meaningfully account for and disclose on people (Stittle, 2004), which is evident even via the implications of Lajili and Zeghal (2005b & 2006).

As advancement to the subject, moving beyond descriptive analysis, researchers have expanded their studies towards determinants and the value relevance of accounting and financial reporting recognition of human capital investment via labour cost voluntary disclosure (Lajili and Zeghal, 2005b & 2006) in different context. They conceptualised investment in human capital based on labour economics approach; where human capital indicators are developed based investment on education, training, health and medical care, though ended up using the total labour cost in the research due to data unavailability. In these studies, Lajili and Zeghal (2005b) used valuation model relating to firms market to book value where and Lajili and Zeghal (2006) adopted portfolio performance approach. The

results of both studies revealed that higher labour cost disclosing firms outperform or command higher equity market value compared to lower labour cost disclosing counterparts. Results implied that there is a market opportunity for human capital rich firms to differentiate themselves for their industry peers through a proper mechanism of human capital accounting and reporting. This study has recognised only what is measured as labour cost and ignored the financial reporting recognition of qualitative and additional quantitative information. However, it's imperative to continue studies covering both aspects together addressing the overall accounting and financial reporting recognition of human capital investment measured in terms of human capital expenditure and disclosure.

Examining human capital disclosure from developing country perspective, Abeysekera (2008) attempted to understand the determinants of human capital disclosure in annual reports of firms listed in Colombo stock exchange, Sri Lanka. Using the techniques content analysis of annual reports of 30 firms accounting for the highest market capitalization (to avoid the size effect) for two years 2001 and 2002, an in-depth analysis via case study based interviews conducted with key human resource executives, Abeysekera, (2008) revealed that firms have used disclosure in order to reduce the tension between firms stakeholders specially in the interest of further capital accumulation (Abeysekera, 2008). According to the results of frequency analysis, employee relations, employee measurement, training and development and employee welfare consequently became the most reported categories of attributes giving the priority to social and political constituents, the support of which was needed for capital accumulation. Workplace safety, equity issues and entrepreneurial skills on the other hand, became the least reported

confirming previous finings as well (Guthrie and Petty, 2000). The results have been attributable to high social development of Sri Lanka, while accounting for low economic development. Using human resource executives for the interviews could be criticised on the ground finance executives actually are the group responsible for accounting and financial reporting recognition of investment in human capital, particularly considering what is recognised and to what extent, though human resource executives involved with the management aspects including provision of information.

Cormier et al. (2009) have further expanded the human capital value relevance studies to examine the stock market reaction to different levels of information precision. Since information precision is an information attribute underlying disclosure credibility, information precision varying from indicative and qualitative to quantitative to monetary was understood reflecting the human capital disclosure precision in this study. Information disclosed in websites of a sample of 155 firms listed in Toronto stock exchange is used as the source for data collection categorising them to indicative, qualitative and quantitative. Results revealed that quantitative disclosure reduces the information asymmetry conceptualised in this study as the stock price volatility and Tobin's Q, while indicative human capital disclosure is marginally associated with the reduction of information asymmetry. Results further revealed that firms consider the cost and benefits in determining the precision attributes of their disclosures. Moreover, results imply that market reacts differently to deferent levels of disclosure precision specifically for quantitative, particularly since quantification is central in accounting. This demands accounting and financial reporting recognition of investment in human capital of the firms as well to be

adopted paying attention to both quantitative and qualitative information reflecting firm value creation, while empirical frameworks as well deemed to be enhanced to capture both.

2.6 CONCLUSION

The literature review emphasised that there has always been an unaccounted portion of value of firms, which according to accounting is reflected even via the difference between market value and book value of firms. This has been a result of firms' investment in some aspects, which are not properly recognised through the existing accounting system. Recognition of these intangible aspects via accounting and financial reporting system has inspired researchers and accountants to explore the situation further to understand, where actually this unaccounted value is created and how exactly it has been or could have been recognised via accounting and financial reporting practice. This exploration has paved the way for researchers to move ahead with the sub-discipline voluntary accounting and financial reporting practice aiming different aspects of intangible asset valuation, voluntary corporate disclosure, corporate governance, research and development, corporate social responsibility, intellectual capital and human capital development, assuming that they either individually or as part of a group fully or partially account for the gap recognised as unaccounted. However, due to the unique position employees possess, human capital has been recognised as starting point of this value creation or the unaccounted capital particularly as a significant aspect of intangible asset management.

Emphasising the importance of intellectual capital management, researchers (Sharabati et al., 2010) have recently recommended that organisations, particularly highly knowledge intensive ones should identify "key people and assign them the role as intellectual capital champion" in a way that these people become "responsible for preparing a plan for managing intellectual capital and linking it to the organisations strategic goals" (p. 117). They further highlighted the significance of the key roles: chief intellectual capital management officer and chief knowledge officers. However, human capital being the value creator of the intellectual capital raises the question, should this be better managed at the level of intellectual capital or human capital.

Based on previous evidence, accounting and financial reporting recognition of human capital investment via human capital expenditure and disclosure is understood as an alternative path explained using different theoretical perspectives such as; resource-based, agency, stakeholder, stewardship, political economy of accounting and even human capital theory. Elaborating on these theories, the next chapter attempts to clarify the theoretical landscape, which better explains the above practice in exploring the value relevance.

CHAPTER THREE

THEORIZING AND CONCEPTUALISING

3.1 INTRODUCTION

The literature review chapter attempted to provide general understanding about the subject human capital from accounting and economic perspectives to the social scientific perspective by addressing accounting and financial reporting recognition of human capital investment by firms using theoretical and empirical findings covering a lengthy period of time. Objective of this chapter on the other hand, is to present and justify the theoretical background of the research with the existing research evidences and finally to derive the theoretical framework of the research. This process is started with a general discussion about theory and theorising, theories governing the firms' accounting and financial reporting in general which is then narrowed down to the theories governing the practice of investment in human capital and accounting and financial reporting recognition of human capital investment in particular. The study covers human capital accounting at three different levels: a descriptive analysis of investment in human capital of the firm measured as human resource expenditure and the accounting and financial recognition of the investment in human capital, determinants of investment in human capital measured under the two criterion above and the consequence of investment in human capital measured again using the two conceptualisations mentioned above. Hence, the conceptualisation chapter will flow starting from theory and theorising in general until it is specialised to the theories explaining the firms' practice on investment in

human capital measured via human resource expenditure value added human capital coefficient and voluntary information disclosure.

3.2 THEORISING

Theories are simplified models of some complex and comprehensive phenomenon. They allow people to understand and comprehend a phenomenon, sometimes with some assumptions and hypothetical relationships. However, since they are just models relying on many assumptions, the validity and the consistency of application of theories in variety of circumstances can be little questionable. Theories have been defined in many ways. As it is cited by Raihi-belkaoui (2000), Hendriksen explained that, "Theory represents the coherent set of hypothetical, conceptual, and pragmatic principle of forming the general frame of reference". The primary objective of using theories in accounting is to provide a basis for prediction and explanation of accounting behaviour and events. Raihi-belkaoui (2000) has explained theory in a way it is best suited for accounting discipline relying on the above definition given by Hendriksen. The approaches to formulate theories in general as well as more towards accounting in particular includes: a) Non-theoretical, practical, or pragmatic (informal) approaches, and b) theoretical approaches including deductive, inductive, ethical, sociological, economic and eclectic. Each of these approaches has displayed advantages and disadvantages when applied to accounting researches while differing in research paradigm. There have always been arguments about the causality between theory and practice. Arguing against the proposed concept (by Jonsson, 1988 as cited by Montagna, 1991), accounting theory has not yet been shown to be

an important driving force in the development of accounting practices. Montagna (1991) emphasised the fact that theory necessarily guides practice. However, considering the history of the evolution of the accountancy profession there has always been evidence to prove otherwise (Sunder, 2005).

In general, it is required that financial statement preparers and auditors must have a good understanding of accounting theory (ADB, 2002a & b). However, some drawbacks highlighted in accounting literature emphasises that no single governing theory of financial accounting and reporting is rich enough to encompass the full range of user environment specifications effectively (Ng, 1978; Laughlin, 1995). Moreover, discrepancies are identified even based on the perspectives of parties involved such as producer perspective (financial executives and auditors,) and consumer perspectives (business pluralists and academics). Researchers thus tend to argue on, the existence of sources as financial accounting literature and not financial theories (Raihi-belkaoui, 2000). Apart from the fundamental accounting theories such as double entry bookkeeping, mostly preparation of financial statements, financial reporting etc. has been governed by different theoretical perspectives depending on many factors such as country or region, regulatory framework, governance mechanism, period, the issue addressing etc.. As cited by Laughlin (1995) "accounting theory will never be like theory of gravity" and "it is a social practice conducted by diverse social actors" (p. 83).

Llewellyn (2003) has recognised five levels of theorising, while looking in to the relationship between those levels. These levels of theorising identified rises from lower level to upper level as: metaphor, differentiation, conceptualization, context

bound theorising of setting, and context free grand theorising. Out of them in qualitative management and accounting research the uppermost level, context free grand theorizing has been over emphasised compared to the other four lower levels, which hasn't been prominent in research discussions. However, while the basics in accounting such as double entry book keeping belongs to context free grand theorizing level, the lower levels of theories can also be applied on aspects such as environmental, social and human capital accounting, which could later be moved to the upper levels of theorizing. The level of theorizing therefore determined most of the other considerations as well such as: research paradigm, methodology etc. (Llewellyn, 2003). Therefore, the mechanism of theorising in this research as well determines the key issues and methodological concerns. Moreover, theorizing in certain instances varies with the research objective and the variables involved in each of the objectives as it is for many of social science related studies leaving many grounds for further criticism.

3.3 THEORIES EXPLAINING FIRMS, ACCOUNTING AND FINANCIAL REPORTING

Accounting has become an academic discipline as a result of the activities such as stock market crash in US and Royal Mail case in UK during 1929 (Beattie, 2005). Initially, financial accounting has largely been based in economic theorising, which has later been changed to decision usefulness based on social scientific theorising (Beattie, 2005; Stittle, 2004). Theories explaining the existence of firms and firm behaviours have been the foundation when it comes to explaining many accounting

and financial reporting practices. Consequently, same set of theories are utilised in explaining accounting and financial reporting recognition of investment in human capital. They include but are not limited to: agency theory (Jensen and Meckling, 1976; Burton-Jones, 1999; Michalisin, 2001; Saam, 2007; Wang et al., 2008), stakeholder theory (Smith et al., 2005), legitimacy theory (Wilmshurst and Frost, 2000; Campbell, 2000), political economy of accounting theory (Tinker, 1980; Cooper and Sherer, 1984; Sunder, 1988; Abeysekara and Guthrie, 2005), institutional theory (Aerts et al., 2006), and stewardship theory (Muth and Donaldson, 1998). Particularly considering the aims and objectives of the thesis, human capital theory together with transaction cost theory (Burton-Jones, 1999; Lepak and Snell, 1999; Chen and Lin, 2004; Williamson, 1985) and resource based theory (Burton-Jones, 1999; Lepak and Snell, 1999; Chen and Lin, 2004) illustrated in the section 3.5 are observed to play a major role in conceptualising human capital while the other theories: agency, stakeholder, legitimacy etc. facilitate accounting and financial reporting recognition of investment in human capital of the firms.

3.3.1 Agency Theory

Originated initially via the authority relationship existed between master and servant, agency theory has been moved to a higher-level of theorizing reflecting context free grand theory (Llewellyn, 2003). This is inevitable in explaining the relationship between employer and employee (Burton-Jones, 1999, p. 26). According to principle agent relationship, managers are appointed and they are being employed in order to maximise the wealth of shareholders (Jensen and Meckling, 1976). Therefore, as the

agents, managers should be accountable and make activities of the organisations transparent to the principle (i.e. shareholders of the organisation) and most importantly they should act in favour of the shareholders of the firm. The orientation of agency theory focuses on the effect of various contractual relationships including: agency cost, information asymmetry, opportunism, adverse selection and moral hazard, which are related to the accounting and financial reporting recognition in general or particularly in relation to human capital investment (Jensen and Meckling, 1976).

The existences of information asymmetry and the asymmetry in the power relationship between the two parties due to the inherent nature of principle agent relationship have arguably been addressed via the practice of financial reporting (Jensen, and Meckling, 1976; Saam, 2007). The principle agent relationship and power and information asymmetry have demanded information disclosure, financial or otherwise in order to minimise the misunderstanding between owners and managers. Agency theory has been utilised by researchers to explain different neoclassical organisational phenomena (Tinker, 1988) and some aspects of voluntary disclosure such as: corporate disclosure (Barako et al., 2006), corporate governance (Samaha et al., 2012; Mangena and Tauringana, 2007), corporate social responsibility and environmental initiatives (Ness and Mirza, 1991), intellectual capital investment (Li et al., 2008; Kang and Gray, 2011) and human capital investment related activities such as executive remuneration, employee and management incentive schemes to align the interests of two parties (Mendez et al., 2011) and disclosure justifying the practice in particular (Athanasios et al., 2013).

As example, Results of Ness and Mirza, (1991) revealed a positive association between environmental disclosure in the annual reports of the UK forms and the oil industry. Due to the damage oil companies cause the environment; it is believed that the managers pay considerable attention on the environmental disclosure with an indirect objective of increasing the welfare of the management and employees, which is consistent with agency theory. Michalisin (2001) in testing the validity of annual report text assertion about innovations, have adopted the agency theory as the basis of analysis and while justifying the annual report text assertion for many of the management related research phenomena the researcher has specifically highlighted that the same approach can be adopted particularly in testing even the relationships between key intangible resources and firm performance.

Wang et al. (2008) revealed that information disclosure variance according to the listing states is explained using the agency theory stating that dual listed firms are extremely motivated to disclosure more voluntarily as an action to protect investors interest thorough enhanced disclosure. Study further revealed that increase of share holders due to foreign ownership, dispersed share ownership, monitoring cost and auditor type has been identified as potential reasoning relating to agency theory in justifying the demand for additional information by the firm stakeholders. However, since earning management of a firm is a decoupled behaviour, with different types of pressures such as regulative, normative, cultural-cognitive etc., using agency theory in explaining the shareholder value creation perhaps has been overwritten by other theories such as institutional, stakeholder, or stewardship (Donaldson and Davis, 1991; Kury, 2007).

In accounting and financial reporting recognition of firms investment in human capital, treating employees as an asset, identifying the expenditure on employees as an investment etc., is recognised as a mean of addressing issues such as information asymmetry and moral hazard via proper training and development. In addition, agency argument has the potential to justify the introduction of employee share scheme and employee share option scheme in which case issues such as opportunism and adverse selection will perhaps be settled. Agency theory, in this sense is recognised even as an element shaping the structure of corporate administration (Mendez et al., 2011), which is recognised as belonging to the higher level of theorizing (Llewellyn, 2003). Moreover, since financial reporting recognition of human capital investment is a voluntary practice, agency theory would be an ideal theory explaining the practice (Barako et al., 2006; Ness and Mirza, 1991). Proving that, agency theory has been used in explaining the accounting and financial reporting recognition of human capital investment in Greece (Athanasios et al., 2013) and in Spanish context (Mendez et al., 2011) to study the remuneration policies applied to the executive directors. The results confirmed that, while it's not the only, agency theory is a major theory explaining accounting and financial reporting recognition of the firms' investment in human capital both from expenditure and disclosure perspectives.

3.3.2 Legitimacy Theory

Legitimacy is defined as "a property of rule or a rule making institutions, which itself exerts a pull towards compliance on those addressed normatively because those

addressed believe that the rule or institution has come in to being and operates in accordance with generally accepted principles of right process" (Frank, 1990, p 24). Legitimacy theory was initially developed based on the fundamental framework of Thomas Frank (Frank, 1990) on international relations mostly operated within the international law or regulatory system. Considering the international law arena, apart from being found in treaties, resolutions of international organisations, judgements of international courts, and arbitrary tribunals, rules are even found under the category of "customary practice". Even though this was initially introduced in international relations arena, the same has been open to apply in business, accounting and financial reporting disciplines and as a result it has become one of the most cited theory in social and environmental accounting arena (Lindblom, 1994).

According to Lindblom (1994), legitimacy is a condition or status, which exist when; an entity's value system is congruent with the value system of the larger social system of which the entity is a part. It can even be identified as the foundation on formalising the accounting and financial reporting practice as well, considering the development adoption and expansion of the Generally Accepted Accounting Principles (GAAP). In addition, as it provides a generalised perception or assumptions to make sure that the actions of entities are desirable, proper or appropriate within some socially constructed systems of norms values, beliefs and definitions (Tinker, 1984; Lindblom, 1982; Schman, 1995), it has widely been applied in terms of accounting and financial reporting since these aspects have rarely been covered by a properly defined regulatory framework (Lindblom, 1994).

According to legitimacy theory, information disclosure by firms are motivated by corporate need to legitimise the activities as they exist in society of external environment with many explicit or implicit contracts (Campbell, 2000). Further, considering the explanatory theories of voluntary social disclosure, legitimacy theory and political economy of accounting theory are set to be the most prominent theories as they are empirically testable. Moreover, Campbell (2000) believes that social disclosure will narrow the legitimacy gap in order to help actually perceiving organisations as they wish to be (Lindblom, 1994). However, in certain instances, legitimacy theory becomes particular when there is a growth in community awareness and concerns, since firms will take measures to ensure their activities and performances are acceptable to the community. As it's illustrated by Wilmshurst & Frost (2000), this is rather highlighted, if members of the community are becoming more and more interested in the impact of the companies on different aspects such as environmental impact. However, results of Wilmshurst and Frost (2000) revealed that managements weight too influences differently when considering the decision to disclose information. The results of the study have provided only a limited support for legitimacy theory to explain the relationship between influential factors of management decision process and the actual environmental disclosure.

Researchers studying about social and environmental disclosure have attempted to explain social and environmental information disclosure in annual reports using institutional theory and legitimacy theory (Rahaman et al., 2004). However, the results of this study revealed that, in situations where institutional pressure particularly become the dominant explanation for organisations' environmental reporting practices, due to some unique reasons such as international pressure,

financial difficulties, historical circumstances etc., the results of institutionalised reporting procedures rather become crisis of legitimation (Rahaman et al., 2004). Further, in an empirical investigation of annual reporting trends of intellectual capital in Sri Lanka, Abeysekara and Guthrie (2005) has identified legitimacy theory as one of the commonly used explanatory theories for intellectual capital reporting. As they pointed out arguments in favour of legitimacy theory "firms legitimise their continued survival by taking desired action in relation to economic, social, political and environmental factors" (Abeysekara and Guthrie, 2005, p. 155) implying that use of legitimacy theory is rather reactive than proactive.

Considering the accounting and financial reporting recognition of firms investment in human capital, the current practice of writing off of total amount spent irrespective of whether they are revenue or capital expenditure ended up carving a distorted picture in all the stakeholders mind. It is revealed that, following the legitimacy argument firms have voluntarily disclosed information, which they assume is relevant and important for the stakeholders through the financial reporting practice. As example, using balanced scorecard framework (Kaplan and Norton, 1992) and Skandia navigator (Edvinsson, 1996 & 1997) for managing and reporting on intellectual capital has been identified as one early attempt for corporate legitimacy. Since legitimacy theory is utilised in explaining increase or decrease in human capital investment as well, the same can also be utilised in compensating the impact of the current accounting practice. As an example, the misleading picture of reduced profitability as a result of increase in the human resource expenditure can be compensated via voluntary information disclosure in annual reports, highlighting the spending on employees as an investment rather than expenditure, even though this is

not the primary theoretical argument behind accounting and financial reporting recognition of investment in human capital of listed firms.

3.3.3 Stakeholder Theory

The history of stakeholder concept goes all the way back to 17th century, though it first appeared as it is in an international memorandum by Stanford Research Institute in 1963 explaining stakeholders as; "those groups without those support the organisation would cease to exist" (as cited by Freeman, 1984, p. 31). It has later been defined more broadly by Freeman (1984 p. 25) as "any group or individual who can affect or is affected by the achievement of firms objectives". They include stockholders, creditors, customers, employees, suppliers, communities and government interest groups. Stakeholder theory in firms plays the role of control and governance providing the answer to the questions: who shall control activities of firms and in whose interest (Jensen, 2001 & 2002; Donaldson and Preston, 1995). In addition, it helps predict organisational behaviour via relationships between the parties involved in organisations economic function (Kaplan and Norton, 1992; Becker et al., 2001). According to stakeholder theory, all stakeholders in certain way have a legitimate interest over firms' activities and decisions (Guthrie et al., 2006). As a result, it has been used in many organisational practices such as strategic management, performance evaluation etc. (Kaplan and Norton 1992; Clement, 2005). Further, in order to address the problem of increasing pressure corporations are facing due to multiple demands for information by different stakeholder groups at different level internally or externally, researchers have widely applied this

approach in different contexts such as knowledge management, design and operation of organisational information systems, corporate social responsibility etc. (Minonne and Turner, 2009; Cooper and Owen, 2007; Phillip et al., 2003). It has also been used as framework explaining accounting and financial reporting recognition of firm practices such as corporate social responsibility, which mainly focus on the information needs of multiple stakeholder groups (Roberts, 1992; Bouten et al., 2011; Smith et al., 2005).

Stakeholder theory as well is claimed to have had its roots in the widely used political economy of accounting theory. In addition, it has been considered as an extension to agency theory (An et al., 2011). While, agency theory managed to explain the separation of owner and manager scenario with the emergence of publicly owned firms, it has further been expanded to resemble the emergence of numerous stakeholder groups and new strategic issue in form of stakeholder framework (Freeman, 1984). On these grounds, stakeholder theory tries to be identified as nexus of contracts and relationships managers have with all the other stakeholders since managers are the only group having contractual relationships with the other stakeholders (Smith et al., 2005).

Roberts (1992) applied stakeholder theory in examining the determinants of the corporate social responsibility activities and disclosure and empirically tested the ability of stakeholder theory in explaining the corporate social responsibility activities and disclosure of the firms. This empirical analysis revealed that measures of stakeholder power, strategic posture and economic performances are significantly related to the levels of corporate social responsibility disclosure, supporting the

stakeholder theory approach implying that it forms a theoretical foundation to analyse the impact of prior economic performances on disclosure practices. This study attempted to improve prior studies using stakeholder approach as a comprehensive theoretical framework, in which measurements of level of corporate social disclosure is taken through independent third party evaluation. However, in further examining the disclosure literature as well as the firm practices, whether there is an equal treatment for all the stakeholders or whether some stakeholder requirements overwrite the interest of others, similar to the explanations of agency conflict is questionable.

In an empirical application, Smith et al. (2005) adopted stakeholder theory to explain country of origin effect or international variation between Norway/Denmark and the US, for the level and type of corporate social disclosure. The results of the study focusing the social disclosures related to the areas of environment, employees, community, customers, and shareholder rights revealed that firms from countries with a stakeholder orientation have more corporate social disclosure in their annual reports as compared to the firms from countries with shareholder orientation (Smith et al., 2005). According to the results, stakeholder explanation was supportive of explaining the corporate social involvement of the firm. The study acknowledged academics' and researchers' concern and contribution on corporate social responsibility issues in explaining the periodical improvements in practice.

However, there have been substantial arguments against as well implying whether the stakeholder approach is actually useful as it supposed to be (Phillip et al., 2003; Cooper and Owen, 2007) since corporations doesn't seems coextensive with

shareholders making firm operations distant from most of the stakeholder categories. Critically evaluating the degree of institutional and administrative reforms empowering stakeholders and enhancing corporate accountability, Cooper and Owen (2007) revealed that despite voluntary and mandatory attempts on accounting and financial reporting recognition of corporate social involvement via external reporting, information disclosed only have had limited effect since they haven't been used in a forum with a legitimate voice.

Since accounting and financial reporting recognition of firm practices is the key way of discharging firm accountability to various stakeholder groups, stakeholder theory has widely been used as a justification of this practice (Roberts, 1992; Smith et al., 2005; Bouten et al., 2011). It has also been understood as a widely used model capable of explaining financial reporting recognition of intellectual capital investment in the annual reports (Guthrie et al., 2004 & 2006; Pedrini, 2007) while very rarely in explaining human capital accounting and disclosure studies (Ax and Marton, 2008). However, Pedrini (2007) revealed that the positive relationship observed between corporate responsibility and the financial performance over last few decades may have been a result of the connection between corporate responsibility and intellectual capital development, in which case human capital particularly is the common interest promoting corporate citizenship behaviours and corporate intellectual capital.

Human resources management practice, workforce of the organisation, managers in particular are the centres in the hub of relationship of firms and their involvement in firms as the key group of internal stakeholders can never be treated in isolation.

Moreover, the demarcation of the category they belong may fade due to some organisational practices such as employee share and employee share option scheme creating employee cum shareholder states, which allow them to feel the sense of ownership. On the other hand, in macro economic scenario of firm operating in society, they represent external stakeholders, and essentially a part of general public contributing to the whole economy. In essence, they create value in terms of products or service and at the same time they consume value as well by being an internal or external customer. Therefore, the way firm treats employees and the way they are recognised though accounting and financial reporting system, arguably has significant impact on the overall financial and stock market performances.

While agency theory, is recognised as key application explaining accounting and financial reporting recognition of firms human capital investment, since this practice promote a higher level of awareness of the involvement of stakeholders in broader context of firms (Roslender and Fincham, 2001) stakeholder theory as well is understood to be applicable particularly in explaining the nexus of relationship in conceptualization and discharging accountability considering multiple stakeholder perspective.

3.3.4 Political Economy of Accounting Theory

While the common law rules of accounting were proposed initially via Paccioulli accounting text, emergence of the complex and comprehensive organisations such as publicly held companies and related accounting systems has demanded for an

accounting system that can not easily be met by the common law approach (Sunder, 1988). In this scenario, political economy of accounting theory has been adopted as an attempt to develop a conceptual framework as the accounting equivalent of the constitutional law. Political arithmetic became the basis for the political economy of accounting theory, which was originally emerged decades ago as a result of the attempts of Sir William Petty in developing the relationship between the economic functions such as production, buying, selling etc. with the regulatory framework which consist of law, customs, government and governance. In developing this framework, Petty (as cited by Dooley, 2005) used the facts about the society to construct some arithmetical illustrations rather than conduct laboratory experiments as in the induction process. This satisfied the requirements of social accounting, which later was interpreted to political economy of accounting; that is collection or estimation of economic statistics and phenomenon plus theoretical framework to organise. Political economy of accounting theory emphasise social and political interaction in relation to economic transactions of society and it has widely been used by many of the researchers in explaining financial accounting and reporting practice (Tinker, 1980).

Considering the previous empirical studies (Cooper and Sherer, 1984; Tinker, 1980; Williams, 1999; Abeysekara and Guthrie, 2005; Bushman and Piotroski, 2006), political economy of accounting theory has been identified as an alternative framework in analysing the role of accounting information and voluntary disclosure practice by way of "sustaining and legitimising the current social economic and political arrangements" (Abeysekera, 2006, p. 70). According to Tinker (1980), political economies rely on the social relations of the production which is an analysis

of the division of power between the interested and the powerful groups in the society and the institutional process through which interests may be advanced. The political economy approach to financial reporting looks at accounting function within a broader structural and institutional environment in which it operates. Hence, information disclosures to external stakeholders are also promoted through the interrelationship between the political and the economic forces in the society. Considering the imperatives, the political economy of accounting has been identified by Cooper and Sherer (1984) as (1) normative, (2) descriptive and (3) critical approach which provides a broader and a more holistic framework for analysing and understanding the value of accounting reports within the economy as a whole. This theory argues, "firms disclose in a way that sets and shapes the agenda of debates in order to mediate, suppress, mystify and transform the conflict between the firms and its social economic and political arrangements" (Abeysekera, 2006, p. 70).

Political economy theory has also been tested in examining the relationship between societal variables and voluntary environmental and social information disclosure in Asia-Pacific context (Williams, 1999). The results revealed that cultural dimensions including uncertainty avoidance and masculinity and political and civil systems have been significant in explaining the variation of environmental and social accounting disclosure. However, the legal system and equity market was not found to be significant with this regard. Moreover, political economy of accounting theory has been the foundation for some other theories such as stakeholder theory and legitimacy theory. And this is claimed to be rather proactive while the legitimacy theory has claimed to be reactive though it has its roots in the political economy of accounting theory. Political economy of accounting theory has already been used in

understanding the intellectual (Abeysekara and Guthrie, 2005) and human capital disclosure (Abeysekara, 2008) in Sri Lankan context.

Due to the ability of critical examination and the comparison of social, economic and political situations, Abeysekera (2006) revealed that inter-country studies tend to get more benefits by adopting political economical accounting theory in empirical studies on accounting and financial reporting recognition of socially related phenomenon. As example, interpretation of the results of Abeysekara and Guthrie (2005), comparative to the previous empirical findings from Australia, the ability to recognise difference in between the political social and economical arrangement of the two countries under political economy of accounting approach, have provided a more suitable and germane method for comparative interpretation. While legitimacy theory is claimed reactive, political economy of accounting theory is a proactive, making it suitable to explain firm investment practices such as intellectual capital (Abeysekara and Guthrie, 2005). However, this theory hardly is identified as the explanation for accounting and financial reporting recognition of human capital investments, as its less acknowledged (Montagna, 1991) particularly in terms of human capital studies. Moreover, agency, stakeholder and legitimacy together has provided the ideal framework offering more promise over the other theories in justifying the theoretical framework on accounting and financial reporting recognition of human capital investment (Beattie, 2005). Further, since political economy of accounting theory better address context specific as well as comparative scenario, the choice of stakeholder and legitimacy which could be considered reflecting higher level of theorizing (Llewellyn, 2003) is understood to be well suited

in developing the theoretical framework of the study accounting and financial reporting recognition of human capital investment.

3.3.5 Institutional Theory

The formal organisational structures of institutions are generally formed through rationalization of institutional rules (Meyer and Rowan, 1977). Considering previous studies, these institutional rules are the norms established in society, which are considered as taken for granted, supported by public opinion or even force of law. Isomorphism of institutional environment with organisation, in fact decides the success and survival of organisations in society (Meyer and Rowan, 1977). Hence, institutional theory basically talks about the stability of institutional order explaining how institutions operate and what are the expectations of the expected behaviour of institutional actors (DiMaggio and Powell, 1991) and how firms respond to contextual pressures and influences to appear legitimate to investors and shareholders. According to, DiMaggio and Powell (1991), it has been widely utilised basically under the organisational analysis.

Researchers have utilised institutional theory in studying about the earnings management (Kury, 2007) and information disclosure (Aerts et al., 2006; Guthrie and Petty, 2000; Rahaman et al., 2004; Irvine, 2008) though it is considered to be representing lower level of theorizing compared to the others (Llewellyn, 2003) due to the metaphoric nature of theorizing. It has been used in explaining the information disclosure widely considering environmental disclosure (Aerts et al., 2006);

however, it has not been utilised in recognising intellectual capital or human capital investment. Though it is widely applied in other phenomena such as earnings management (Kury, 2007), due to the lower level of theorising associated with the parameters of institutional theory (Llewellyn, 2003) such as norms established in society, values, assumptions etc. compared to the agency and stakeholder theories, institutional theory has not been applied in explaining the theoretical framework. However, due to the fact that social relationships particularly relating to the human component of the organisation still resembles the relationship between the employees of the organisations, in terms of social and employee interactions and relationships in a classified society and hierarchical firms, employee motivation mechanism etc., there is a potential that institutional theory can well be applied in accounting and financial reporting recognition of investment in human capital in future studies.

3.3.6 Stewardship Theory

In studying organisational economics theories particularly paying attention to agency theory and transaction cost theory, researchers argued that there are inherent problems in firms, because of the narrow model of human motivation and behaviour (Donaldson, 1990a and b). They further emphasised that, there would be a conflict of interest as a result of negative moral characterisation of managers. Further, according to the new economistic language (where question of economic efficiency take centre stage) of organisational economics in capitalistic firms, managers tend to be viewed as ignorant, opportunistic, self-interest oriented, or even displaying moral hazards,

which as a whole may even lead to a negative evaluation by the society (Williamson, 1985).

However, arguing against this phenomenon under the stewardship theory, managers are treated as “stewards rather than entirely self- interested rational economic man” (Muth and Donaldson, 1998, pp. 5-6). Stewardship theory argues an alternative managerial motivation to agency theory as it recognizes non-financial motives of managers including the need for achievement and recognition, the intrinsic satisfaction of successful performances, respect for authority and work ethics etc., which are aligned with the organisational objectives. They are rarely explained under capitalistic approach (Donaldson and Davis, 1991). Further, stewardship theory says that there is no conflict of interest between managers and the owners; however, there is a need for a governance structure to find an organisational structure allowing conditions to be achieved most effectively. This theory believes that, “managers essentially want to do a good job and to be a good steward of the corporate assets” (Donaldson and Davis, 1991, p. 51). However, to what extent executives achieve good corporate performance depends on the availability of the organisational structure helping executives to formulate and implement plans for high performances. As an example one of the major structural mechanism to avoid managerial opportunism would be via board of directors and the board leadership structure (Donaldson and Davis, 1991). Hence, stewardship theory said to be explaining many controversial arguments emerged against agency and other organisational economic theories.

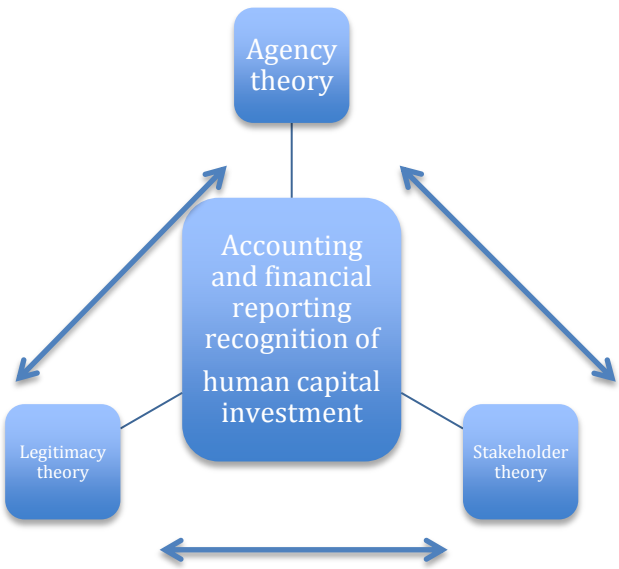
Stewardship theory in certain instances has been used in explaining organisational, accounting and financial reporting practices. In many instances, to discover the influence of corporate governance characteristics on firms' performances, researchers opted to have stewardship theory though it argued in an alternative way as opposed to the agency theory. The use of stewardship theory is mostly found in corporate governance studies (Donaldson and Davis, 1991), while it has not been applied much in intellectual capital or human capital disclosure related studies. The explanations under stewardship theory provide a framework to shape the governance structure of the firms. Therefore, though not widely, it could perhaps be employed even in the current study if justifications are required for the variables related to the stewardship mechanism such as firm leadership structure. Moreover, many of the employee related aspects such as employee compensation strategies such as employee share scheme, employee share option scheme, bonus, pay for performance can be identified as a part of strengthening the stewardship mechanism, as many of the above practices has the potential to align the individual objectives of the employees with those of the organisations.

3.4 INTEGRATED THEORETICAL FRAMEWORK

Considering the theories illustrated above, though they are explained under a certain uniquely identified concept relating to the firms, each and every one of them has pros and cons of their own and they are suited in explaining different organisational practices. On the other hand, there have always been overlaps in the explanations with no clear boundaries between them (An et al., 2011). As a result, it certainly is

hard to accept one and reject the other though it is possible to weigh the pros and cons of applying a particular theory and chose which works better in a given circumstance. Most of the above theoretical perspectives possess reasoning behind information disclosure in general and accounting and financial reporting recognition of human capital investment in particular. However, an integrated framework of theories: agency, stakeholder and legitimacy combined together (Figure 3.01) ought to have more explanatory power given the multiple stakeholder nature of the subject matter and widespread application in previous studies (Li et al., 2008; Kang and Gray, 2011; Mendez et al., 2011; Bushman and Piotroski, 2006; Rahaman et al., 2004; Bouten et al., 2011; Smith et al., 2005). Since the study cover the broad aspect accounting and financial reporting recognition of human capital investment measured via human resource expenditure and information disclosed, an integrated framework developed and proposed similar to An et al. (2011) better explain the scenario.

Figure 3.01: Integrated theoretical framework



The Framework proposed above remedies the issues highlighted under organisational economic theory (Donaldson, 1990a & b), which combine agency and transaction cost theories to explain different organisational practices and situation. Donaldson (1990a & b) has combined agency and transaction cost theory on the ground that transactions and events of firms usually involve two parties and they are always structured to minimise the transaction cost. Similarly the current accounting and financial reporting practice of investment in people resembles the same implying that there are agency issues and the cost for employees always need to be minimised. However, in looking at the same problem in a different perspective considering employees rather as the most valuable resource or asset to be capitalised on, than minimising transaction cost involved, the integrated framework of agency, legitimacy and the stakeholder posses more freedom in explaining the employee involvement, value creation by the employees and the significance of the employees as a group playing multiple roles in firm as well as in society as a whole. Hence, this integrated framework remedies the inadequacy of theories and literature concerning the holistic view of firms' investment in human capital via accounting and financial reporting recognition.

Considering the decision usefulness, theories explaining accounting and financial reporting practice need to be inline with the theories explaining the operational and strategic management aspects (Ax and Marton, 2008). Moreover, decision usefulness justifies that firms disclose information since stakeholders find this information useful for decision-making in different capacities. Therefore, in addition to the theories governing the accounting and financial reporting recognition in human capital investment, the concept human capital investment is elaborated in light of the

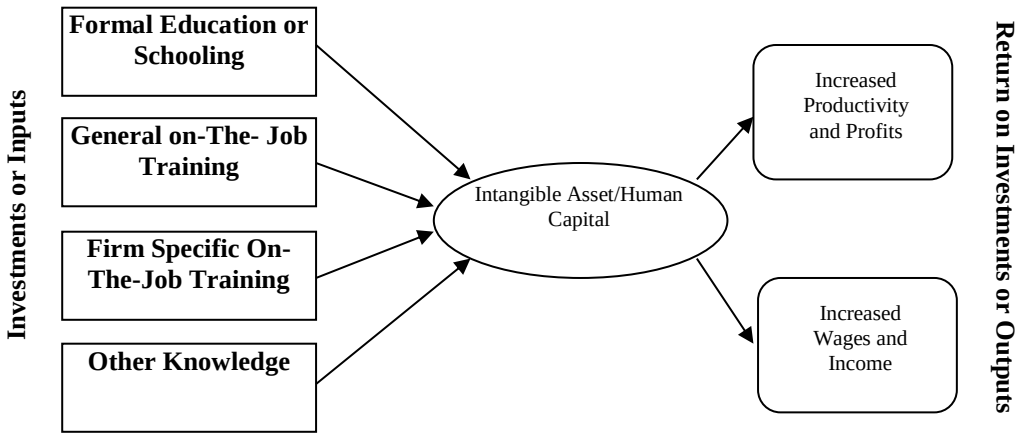
human capital theory. Since transaction cost theory and the resource-based theory are in favour of the arguments of the human capital theory the human capital theory discussion have also been enriched with the evaluation of these two theories in light of the accounting and financial reporting recognition of human capital accounting.

3.5 HUMAN CAPITAL THEORY

The concept of human capital possesses a long history in which researchers tried to look at it from different perspectives. The initial literature related to human capital goes back to 17th century, where pioneers in the field such as Sir William Petty (1690), Cantillon (1755), Adam Smith (1776) the father of economics, did highlight the importance of human component in organisation by illustrating how labour create value for firms and how excess labour become a part of firms' capital (Dooley, 2005). However, Garry S. Backer and Theodore W. Schultz claim the credit for human capital theory formulation, for recognising human capital as a distinctive field of research (Schultz, 1961; Becker, 1962; Backer, 1993; Zula and Chermack, 2007). Backer (1993) highlighted that human capital development of a country has always been reflected through the economic development of the country in both micro and macro levels. Therefore, human capital theory suggests, "education, training and development and other knowledge have a positive impact on productivity and wages" (Zula and Chermack, 2007, p. 249) which exhibit (figure 3.02) direct implications on human resource development implying that its an investment in human capital.

Many early researchers have argued that what people acquired through education and training, which is termed as human capital is a product of deliberate investment in people (Schultz, 1961; Becker, 1962; Graham, 1981; Maher, 1996). It has even been identified as one of the most important component under the intellectual capital development of the firms as well (Nerdrum and Erikson, 2001; Edvinsson, 1996 and 1997; Edvinsson and Malone, 1997; Edvinsson and Sullivan, 1996; Brooking, 1997). However, the importance of it still has not adequately been reflected via current organisational practice or accounting and financial reporting recognition. As a result, researchers have suggested that the link between human resource development, human capital and organisational performance; need to be explored in terms of the positioning within the context of knowledge economy (Nafukho et al, 2004).

Figure 3.02: Model of human capital theory and the associated investment or inputs and the associated return on investment or the output.



Source: Zula, K. J. and Chermack, T. J. (2007). Human capital planning: A review of literature and implications for human resource development, Human resource development review, Vol. 6, No. 3, p. 250.

Claiming a lengthy history and a wide spectrum of study, human capital theory is one of the universally accepted concepts in economics, accounting and other social sciences. Human capital theory suggests that human component, if properly managed, is an investment for firms (Becker, 1962; Nafukho et al., 2004; Zula and Chermack, 2007) as they have the potential to create value for firms (Edvinsson, 1996 and 1997). Emphasising on human capital concept, Sweetland (1996) suggests that, "individuals and society derive economic benefits from investments in people" (p. 341). According to the extensive review conducted by Sweetland (1996), the increasing amounts of literature and research trends, on human capital theory (Lev and Schwartz, 1971 and 1972; Chen and Lin, 2004; Lepak and Snell, 2002; Graham, 1981; Sweetland, 1996) have suggested the importance of human capital theory generally in society as well as in the firm environment. Most of the initial studies have paid much attention to the human capital investment in general (Graham, 1981; Sweetland, 1996). In subsequent studies, researchers have paid particular attention to firm level human capital measurement and accounting for it (Lev and Schwartz, 1971 and 1972; Chen and Lin, 2004; Lepak and Snell, 1999 and 2002; Longo and Mura, 2007). It implies that firms tend to use different perspectives in understanding the role of employees and investment in human capital in firms. Moreover, it is an obvious fact that there have been recent trends of research on human capital valuation and accounting and even corporate reporting recognition via qualitative human capital disclosure at firm level in addition to many of the macro level studies. However, irrespective of whether the researches are conducted at micro or macro level, the same human capital concept has been adopted in these studies.

In addition to the human capital theory argument, transaction cost theory (Burton-Jones, 1999; Lepak and Snell, 1999; Chen and Lin, 2004; Williamson, 1985) and resource based theory (Burton-Jones, 1999; Lepak and Snell, 1999; Chen and Lin, 2004), as well are equally capable in justifying the need for the accounting and financial reporting recognition of firms investment in human capital in particular. Thus, they have critically been evaluated especially considering how they are applied in human capital conceptualisation.

Transaction cost theory has initially been proposed in explaining the existence of firm via the Nobel work of Ronald Coase (as cited by Lepak and Snell, 1999) with the aim of cost efficiency of the transactions. According to transaction cost economy theory, market and firms are alternative views to complete transactions (Williamson, 1985) in which case the choice of the firm or market is determined by the relative efficiency since "the human factors affecting the choice of governance (firm or market) are assumed to be bounded rationality (limited ability) and opportunism (self interest plus guile) (Burton-Jones, 1999, p. 26) though opportunism has frequently been criticised (Donaldson, 1990b). In applying transaction cost theory to human resource management, firms choose to employ personnel in the most efficient way taking in to account the transaction cost for hiring or bureaucratic cost for training and development (Coase, 1937 as cited by Lepak and Snell, 1999). Though transaction cost theory aims at cost efficiency and looking forward to the economic efficiency, how applicable it is in human capital investment is debatable (Barney, 1990).

Considering human resource expenditure, some cost components are directly related to employee development generating return over a period, while others: hiring cost, wages and salaries, are expenses for the year incurred. This leads to the question of how can they be separated for capitalizing as human asset? Transaction cost theory implies that human capital posses dual properties of asset speciality and asset uncertainty (Lepak and Snell, 1999) hence only the items qualifying these criterion is capitalised. However, this theory has been subject to many subsequent arguments due to the difficulty in recognising the exact value (Chen and Lin, 2004). Even though transaction cost theory has not been used to justify the theoretical framework of this study, it has been considered in conceptualizing firms' human capital.

On the other hand, resource based or knowledge based theory was developed based on the conceptualisation of the firm by Penrose as, a "collection of productive resources" (Penrose, as cited by Burton-Jones, 1999, p. 29) where, a firms' distinctive competencies are based on firms' resources and capabilities such as patented inventions, intangibles such as reputation, brand image, human skills etc.. Since resource-based view can be aligned with the practice intellectual capital according to the intellectual capital perspective (Barney, 1991), this theory has widely been used in intellectual capital (Riahi-belkaoui, 2003) and human capital management and accounting studies (Abhayawansa and Abeysekera, 2008; Chen and Lin, 2004; Lepak and Snell, 1999).

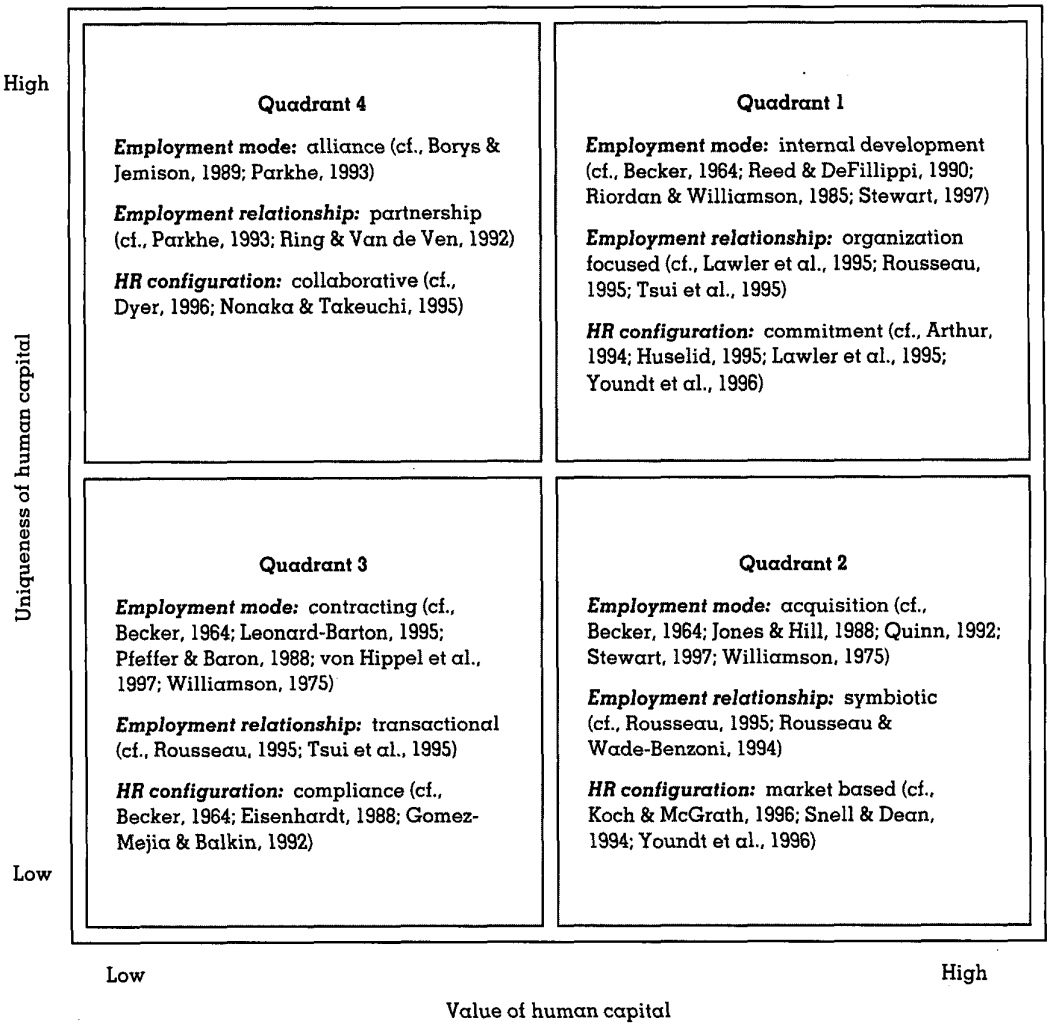
According to the resource-based theory, a resource becomes valuable for firms if and only if it has the potential to contribute to the competitive advantage of firms. Therefore, according to the resource-based view, human resource is proposed even

as human asset (DTI, 2003b). However, researchers argue that human resource becomes an asset if and only if it has the potential to create a competitive advantage for firms (Chen and Lin, 2004; Lepak and Snell, 1999). Based on this, the firm strategies are often developed in a way that core competencies are developed internally while general technologies and skills are outsourced. This argument from human capital theory perspective implies that the talent capable of core skills are the human asset of the firms while the rest can be written off as human resources expenditure. This is clearly illustrated via human resource architecture (Figure 3.03) framework developed by Lepak and Snell (1999) considering the knowledge and skills of employees (uniqueness of the human capital) and their strategic importance (value of human capital). In this model, human resource management and development functions have been categorised into four quadrants: internal development, acquisition, contracting and alliance illustrating what type of employment modes and human resource configurations are likely to result in capital gain. The same model was used by Chen and Lin (2004) to highlight, which items of human resources are to be reported and disclosed as human capital of the firm.

According to Lepak and Snell (1999) and Chen and Lin (2004), formation and acquisition cost at early stage of development of human resources is treated as human capital only when they posses the properties of uniqueness and high value resembling core skills to the firm as far as the position of firm in industry is concerned. On the other hand, learning cost in the middle of development process is treated as human capital as long as companies invest in learning of human capital possessing the property of uniqueness. This differentiates firm specific training and development aspects from general training and skills development implying that firm

specifics will be attracting much attention of the management in terms of human capital investment compared to general training. In addition, replacement cost at the final stage of development as well is capitalised with regard to the human capital possessing the properties: high uniqueness and high value. Hence, the current accounting practice and undoubtedly the subjective definition of human capital and classification of human resource expenditure is criticised on this ground.

Figure 3.03: Summary of the Human Resources Architecture



Source: Lepak, D. P. and Snell, S. A., (1999). The human resource architecture: towards a theory of human capital allocation and development, Academy of management review, Vol. 24, No. 1, pp. 31-45

Drawing upon resource based theories and other research streams: epistemology, organisational learning, organisational capabilities, innovation, new product development, etc. most recent researches has centred on the human capital resources focussing more on knowledge based theory (Burton-Jones, 1999). This involve key assumptions: (1) knowledge is the key productive resource of the firm; (2) knowledge is acquired by and in case of tacit knowledge stored by the individuals of the firm; (3) due to the time and cognitive limitation of human beings, individuals need to specialise in the knowledge they acquire; and (4) production or value creation typically require numerous different types of specialised knowledge (Burton-Jones, 1999). Moreover, given strategic competitive advantage is the key for existence, survival and continuous success of the current firms, roles such as creation, protection and integration of the specialised knowledge has become the primary ones of the current firms. Even though knowledge based and resource based concepts simultaneously attempted to justify the human capital accounting practice in a way that employees are recognised formally via valuation (Lepak and Snell, 1999; Chen and Lin, 2004), empirical application of that was limited (Riahi-belkaoui, 2003; Chen et al., 2014). Riahi-belkaoui (2003) via an empirical analysis of US multinational firms revealed that resource based view is equally supportive as stakeholder theory in explaining relationship between intellectual capital investment and financial performance. In this study however, resource based theory is mostly applied in justifying the conceptualisation of accounting and financial reporting recognition of human capital investment.

In a situation where, firms tend to accept the human capital theory argument of employees possessing potential to generate future wealth for firms (Edvinsson, 1996

and 1997; Lev and Schwartz, 1971; Sweetland, 1996) via human capital developed with them over a period of time through education, general and firm specific training and development means, experience over a period of time, it is highly unlikely that firms will opt for the option of minimising the transaction cost in terms of the human resource management functions of the firms. Further, when employees truly are asset for the firms and when the future wealth is tied to the employees of firms, firms tend to understand employees as a strategic competitive advantage, which should be invested in (Lepak and Snell, 1999 and 2002). Therefore, relying on the human capital theory argument, in this study, it is assumed that firms tend to perceive their employees as an asset to be invested in rather than a cost to be controlled and minimised, and it's employees who create value for firms. This theoretical argument and the assumptions are tested in this study, considering the financial implications of human resource management process, via the accounting and financial reporting recognition of firms investment in human capital, measured using human resource expenditure, human capital per value added and voluntary human capital disclosure, in a way that it reflects the firm value creation by employees. The use of all the above three methods of conceptualization facilitate a holistic picture on accounting and financial reporting recognition of firms' investment in human capital. Due to the fact that employees are the greatest asset to the firms and the tendency of firms in confirming this fact repeatedly in their annual reports, it is inevitable to investigate whether firms actually treat employees in the same way. All three theories: human capital (Schultz, 1961; Becker, 1962; Backer, 1993), transaction cost (Coase, 1937 as cited by Lepak and Snell, 1999) and resource based or knowledge based (Coase, 1937 as cited by Lepak and Snell, 1999; Chen and Lin, 2004; Lepak and Snell, 2002) together appropriately justify the use of human capital expenditure, human capital

per value added and qualitatively disclosed human capital information in reflecting the accounting and financial reporting recognition of firms investment in human capital as illustrated below.

3.5.1 Human resource expenditure and human capital theory

The inadequacy of an appropriate measure for human capital has been attributable to the inadequacy in the link between the two disciplines economics and accounting particularly in highlighting the information need with the type and the nature of decision involved (March, 1987; Baker and Wallage, 2000). The same applies regarding the lack of correlation of human capital theories studied at individual, firm and society level with real world practice with relevant decision frameworks (Ax and Marton, 2008). Despite the effort of measuring human capital as an asset, calculation of human capital value and inventing alternative accounting treatment to recognise employees as an asset, firms still tend to stick to the criteria of treating employees just as an expenditure of the firm. This perhaps is a result of the belief that firms actually do not own employees of firms as they can leave the firms whenever they want to (Holmen, 2005) and firms certainly are not willing to take the risk of accounting for an asset, they do not actually own. However, considering the multiple role employees as people play in firm and in the society and the relationship they have with the macro economic environment, treating employees just as an expenditure and attempting to exert control over and minimise the expenditure leads to an unequal distribution of firm value added and ultimately the wealth in between the stakeholders as well. This tends to be a threat not just to the firm but also to the

entire economy due to the multiple roles they play in the economy. This highlights the importance of recognising employees as a valuable asset to be capitalised rather than just expenditure.

Considering the behaviour of human resource expenditure and current accounting treatment for outlay on employees, there is no evidence to reflect that firms treat employees as an asset to the firms rather than an expense. However, human resource expenditure of an entity under the current categorisation consists with payroll cost including wages and salaries, other human resource functions related costs such as recruitment, selection, training and development, retirement benefit obligations, employee benefits, replacement cost etc. (Lepak and Snell, 1999 & 2002; Chen and Lin, 2004). According to human capital theories discussed above, most of the expenditure categories mentioned above does reflect human capital either in total or at least as a portion of the spending (Nafukho et al., 2004; Lev and Schwartz, 1971; Chen and Lin, 2004; Lepak and Snell, 2002; Zula and Chermack, 2007). However, considering some of the empirical studies discussed in detail in the literature review section, in many instances, researchers have argued against this and attempted to highlight the fact that writing off of the total human resource expenditure in the annual financial reports gives a wrong picture since employee are actually the greatest asset or an investment to the firm rather an expenditure (Elias, 1972; Schwan, 1976; Chen and Lin, 2004; Lepak and Snell, 1999 & 2002) offering a strategic competitive advantage for the firms.

Though there are evidences to disagree with the current accounting treatment of writing off of the total human resources expenditure in the annual financial

statements of the firm, there is no way to justify the total human resource expenditure as the human capital of the firm as well. However, relying on the theory of compensation and efficient labour market, many researchers have used the total amount of compensation paid to employees as a proxy to assess the value of human capital (Pulic, 1998 and 2000; Chen et al., 2005; Nazari and Herremans, 2007) in different context. With this regard, it is essential to emphasise that treating human resource expenditure as an input in assessing the human capital, doesn't mean that the total amount spent on people becomes entirely capital of the firm. Thus, some researchers have proposed ways to split up the human resource expenditure to figure out what should actually be written off and what should actually be capitalised considering the uniqueness and the value of employees (Lepak and Snell, 1999 & 2002; Chen and Lin, 2004) though they haven't been used in real world.

Even though number of techniques including the use of payroll cost, expected future earnings, expected value added etc. have been proposed to measure the human capital under the human capital, transaction cost and resource/ knowledge based theories (Brummet et al., 1968; Flamholtz, 1971; Lev and Schwartz, 1971; Chen and Lin, 2004; Lepak and Snell, 1999 & 2002), way few (almost non of them) have literally been penetrated to the real world, leaving the total human resource expenditure disclosed by the firms, the only externally available financial information reflecting the human capital of the firm. Therefore, in this study, as the only available financial parameter reflecting accounting and financial reporting recognition of investment in human capital, i.e. total human resource expenditure, is used as one of the proxy parameter.

This conceptualisation is backed by the assumption, if firms choose to treat employees as an asset with the potential to generate future wealth for firms, they would rather treat the amount spent on that asset as an investment for the firm and will not opt for cost minimization. In this background, the use of total human resources expenditure even in valuing the human capital of the firm allow researchers to capture the problems associated with the current accounting treatment as well. Through the recent accounting and financial reporting literature however, it is evidenced that due to the data unavailability and inadequacy in the application of the proposed methodologies in the real world to recognise firms actual investment in human capital, many researchers have had to restrict themselves to accounting and financial reporting recognition of this investment via the total expenditure or the voluntary human capital information disclosed in credible sources of the firms such as annual reports, prospectus, company websites, etc. (Ax and Marton, 2008; Abhayawansa and Abeysekera, 2008; Abeysekera, 2008; Pulic, 1998 and 2000; Chen et al., 2005).

3.5.2 Human Capital Disclosure and human capital theory

As a remedy for the inadequacies in the current accounting and financial reporting system and framework in valuing and accounting for the human capital investment, firms have started to voluntarily disclose information about the employees of the firm (Abeysekera, 2008; Huang et al., 2007; Abeysekera and Guthrie, 2004). Researchers have further revealed that human capital is vital information though they haven’t been used systematically over a period of time and it is said that human

capital information is capable of providing an insight ahead of time (Royal and O'Donnell, 2008). Through studies conducted at firm level as well as employee level, researchers revealed that human capital can be measured via some human capital attributes or parameters such as innovation, group cohesiveness, practical application, intrinsic work reflection, organisational commitment (Longo and Mura, 2007), even though it is questionable which of them actually contribute more in the whole value creation process by the employees. However, due to the unavailability of a proper framework governed by standards guiding the voluntary information disclosure, firms have randomly chosen information to be included in the annual reports of the firms (Abeysekera and Guthrie, 2004; Abeysekera, 2008). This even has been a result of inadequacy in an appropriate link between the information need considering the decision-making by the firm stakeholders (March, 1987; Baker and Wallage, 2000).

Considering the value relevance of accounting and financial reporting recognition of firm practices, human capital information disclosure in general has been identified having significant impact in enhancing the stock market efficiency (Royal and O'Donnell, 2008) even though, what type of information to be published and how flexible financial reporting could not be answered (Iatridis, 2008; Royal and O'Donnell, 2008; Pedrini, 2007). However, the recent empirical studies on human capital (Royal and O'Donnell, 2008; Pedrini, 2007; Abeysekera and Guthrie, 2004; Abeysekera, 2008; Ax and Marton, 2008) or intellectual capital of which human capital become one significant component (Striukova et al., 2008; Huang et al., 2007) have revealed that there is a huge variation in information disclosure. In certain instances even overlapping between frameworks adopted highlighting the

significance of human capital for intellectual capital development, corporate social responsibility, sustainable development etc. (Pedrini, 2007) as well is observed. This variation in information disclosure via external reporting has been attributable to many firm specific attributes including human resource management practice itself (Ax and Marton, 2008) as well as external environmental pressures such as legislations and regulatory frameworks (Stittle, 2004; Roslender et al., 2004; Roslender and Stevenson, 2009), international accounting harmonization (Christensen et al., 2007) which may have resulted in positive and negative influences on overall practice. Further, the recent debates highlighted that corporate governance and good governance practice of firms as well has promoted the accounting and financial reporting recognition of firms' investment in intellectual capital, where human capital is the value creator (Li et al., 2012; Li et al., 2008).

Empirical studies have further revealed that there is an increasing trend in terms of the type and the depth of information disclosure (Abeysekera and Guthrie, 2004; Abeysekera, 2008). This in certain instances has been claimed to be a part of window dressing via voluntary financial disclosure of the firm. Further, the widespread practice of reporting soft accounting information by the firms recently has even resulted in a paradigm shift in studies on accounting and financial reporting recognition of human capita investments, which shifts from narrow economic and accounting perspective towards social scientific perspective (Stittle, 2004; Roslender and Dyson, 1992; Roslender, 1997; Roslender and Fincham, 2001). Under this new research paradigm, researchers have highlighted the importance of soft accounting information over the hard accounting figures. However, considering the decision usefulness of the information provided in the annual financial statements relating to

the employees, it is imperative to understand whether the information provided are actually addressing the information needs of the firms and what result it generate in return (Iatridis, 2008). This is particularly the case since stakeholders may place different value on different components disclosed (Chen et al., 2005).

Even recent developments in the regulatory framework of external reporting of intellectual capital, covering human capital reporting as well, evidenced that only goodwill and some other recognised intangible assets acquired such as patent, licence, trademark, have accounting basis for measuring the value but not human capital separately (Stittle, 2004). In addition, neither generally accepted accounting principles nor international financial reporting standards have been able to recognise human capital and even a major portion of structural capital despite long research history in the subject (Turner, 2005). Therefore, still many of the intellectual capital components of firms have failed to get their position in financial statements, remaining still as a voluntary disclosure item under external reporting (Holmen, 2005).

In addition to the intellectual capital management and development frameworks reviewed in the previous chapter, a well informed and government backed intellectual capital management and reporting frameworks are found in Scandinavian context. In addition to the quantitative approaches such as human resource financial statements (Grojer and Johanson, 1996 and 1998) from Scandinavian countries, Danish intellectual capital statement framework (DATI, 2000) as well was developed addressing the same issue qualitatively (Roslender et al., 2014) by the Danish Ministry of Science Technology and Innovations. Preparation of the

intellectual capital statement which consist of: knowledge narratives, a set of management challenges, a set of initiatives and a set of indicators (DATI, 2000) was required even by the Danish Financial Statement Act (June 2001) to make the practice more formal, systematic and comprehensive (Holmen 2005). A similar approach could be used particularly for human capital management and accounting as well in a way that the framework reflects the firm value creation by the employees, which essentially is to be identified under the accounting and financial reporting recognition of firms human capital investment.

Since human capital is the value creator of intellectual capital and even in situations, where human capital is properly levered to make them explicit as structural capital, there is always a great potential in the employees them selves to create more value, which makes a firm distinguished from the others, creating a strategic competitive advantage (Edvinsson, 1996 and 1997; Edvinsson and Malone, 1997). This makes it more persuasive that, the current financial implication on employees and result of accounting and financial reporting mechanism in terms of the voluntary information disclosure need to be studied further. For this purpose, conceptualisation of the human capital concept is elaborated in the section below.

3.6 CONCEPTUALISATION

Conceptualization as defined in this research refers to the process of development and clarification of concept or phenomenon in a way that it is clearly understood and meaningful to the users via proper measurement mechanism. Conceptualising a

phenomenon associated with human capital even though it is a universally accepted, or widely spoken of, is still challenging due to the very nature of the subject matter itself. So does the same, considering how to create instruments that can measure the human capital or contribution of human capital in firm value creation or even understanding the reasoning behind and consequences of human capital investment (Brooks and Nafukho, 2006). Considering an overall view on the financial aspects of firm, human capital is conceptualised in a way that it reflects the changes in concepts from conventional to modern perspectives of firms. Conventionally, spending on the employees is treated as expenditure for the firm, which always is aimed at minimising. Even under current economic environment due to conventional accounting treatment for employee spending, human resource budget has been the most susceptible leading to downsizing, job redundancies, trimming down training and developments etc., though all these measures resulted in considerable cyclical impact on firms and the overall economy. However, since firms tend to realise the importance in recognising employees as asset, providing strategic competitive advantage, they tend to use the financial reporting to compensate. Both these phenomenon are captured together for the first time in human capital research spectrum as illustrated in the figure 3.04 below.

Even though there are not many empirical evidence supporting the argument, the higher the human capital expenditure, the higher the human capital disclosure of the firm, Ax and Marton, (2008) revealed supporting finding to conclude that there is a link between the human resources management practice and the perceived importance of the information disclosure. Moreover, reliance on the previous empirical evidence as well justify using quantitative financial implications i.e.

human capital expenditure (Lajili and Zeghal, 2005b and 2006) and the qualitative financial reporting i.e. human capital disclosure (Cormier et al., 2009; Abeysekera and Guthrie, 2004; Abeysekera, 2008) in conceptualising the accounting and financial reporting recognition of firms human capital investment. Moreover, the two proxies expenditure and disclosure provide implications on the attempt of Becker (2001) in explaining accounting and financial reporting recognition of human capital investment via cost control and firm value creation perspectives. Ultimately, firms' investment in human capital is conceptualised using the accounting and financial reporting recognition of this investment via human resource expenditure (termed in the study as human capital expenditure) and the voluntary human capital disclosure.

Figure 3.04: Human capital conceptualization

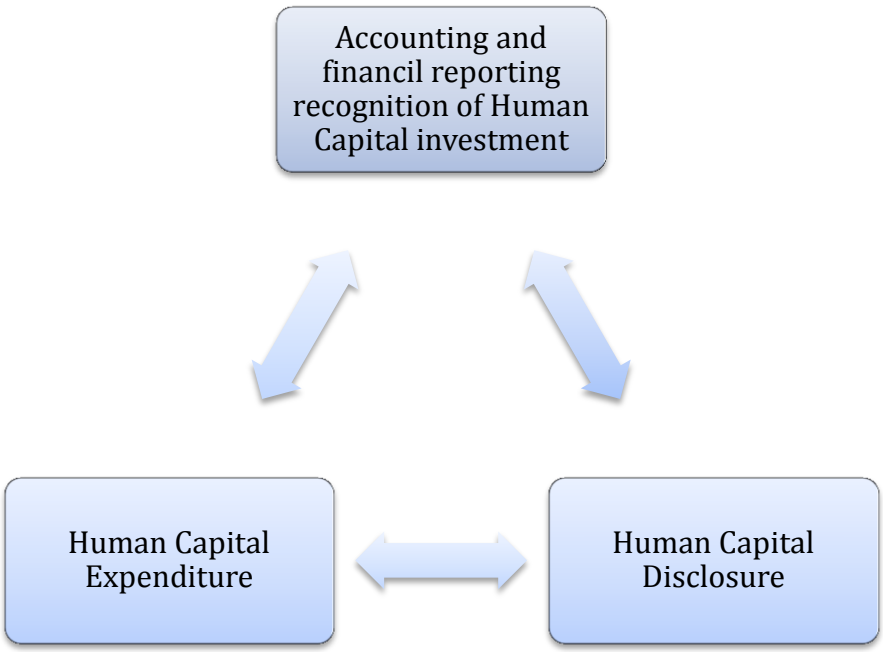


Figure 3.04 illustrates the accounting and financial reporting recognition of the broad concept, investment in human capital conceptualised via human capital expenditure and voluntary human capital disclosure. Using both accounting and economics as

well as the social and scientific aspects of human capital investment in conceptualisation provide a holistic picture on the practice human capital investment.

3.6.1 Investment in Human capital

Human capital is understood as a concept, vaguely defined with no adequate and generally accepted definition. Relying on previous definitions for human capital as well as what is expected of people component of firms, the following definition is developed in this study and utilised in the conceptualization process.

Human capital is defined as,

The potential of employees to contribute in the value creation process of firms through the optimum use of knowledge gained, experience acquired and the attitudes developed over the period of time in accomplishing the strategic success of the firm.

In conceptualising firms' investment in human capital, a holistic approach, providing a 360-degree coverage of employees particularly referring to the contribution of employees in firm value creation, needs to be adopted. Therefore, in this study while human capital expenditure is used as one parameter in deriving the proxies to reflect investment in human capital, human capital disclosure is used as another proxy (Longo and Mura, 2007). They simultaneously recognise the accounting and financial reporting recognition of firms' investment in human capital.

3.6.1.1 Human capital expenditure and efficiency

Use of the expenditure to conceptualise the investment in practices in order to study the performance impact, especially when they actually reflect the characteristics of investment, is inevitable in accounting and finance literature (Ehie, and Olibe, 2010; Chan et al., 1990). This in a way, has been a result of the conventional accounting practice we still adopt. Though not exactly termed as human capital, human resource expenditure in the firm's financial statements as well has significant impact over the firm performances. As example, researchers have revealed that firms who disclose labour cost has commanded higher equity market value in general than non disclosing firms and even better portfolio performance (Lajili and Zeghal, 2005b and 2006). Payroll cost has been used as a proxy for investment in human capital of firms' over a long period of time by many researchers (Lajili and Zeghal, 2005b and 2006). Though they have used different methods in estimating human capital investment for different purposes, yet the payroll cost has been identified as frequently used direct or indirect proxy for human capital investment (Lev and Schwartz, 1971; Brummet et al, 1968; Flamholtz, 1972a & b; Edvinsson, 1997; Sveiby, 1997; Pulic, 2000).

Since the research is aimed at the accounting and financial reporting recognition of human capital investment, in addition to human capital expenditure, the portion of value added by employees as well has been used as a valid proxy reflecting the firm value creation via employees. This has originally been calculated as human capital contribution of intellectual capital efficiency indicator by Pulic (1998 and 2000). Value added intellectual capital coefficient, developed by Pulic (1998 and 2000) has

been used by many researchers in studying determinants and consequences of intellectual capital efficiency as well (Chan, 2009a; Chan, 2009b; Chen et al., 2005; Tan et al., 2008). The value added human capital coefficient is calculated using the method proposed by Pulic (1998 and 2000) in a way that it reflects investment in human capital opposed to the efficiency of investment.

Value added intellectual coefficient (Pulic, 1998 and 2000) used the methodology proposed by Riahi-belkaoui, (2003) in calculation of the value added of firms. The complete calculation process is given in the equations below. The total amount of value added (VA) of the firm is calculated as the difference between input and output of the firm (equation 1). The equation can further be elaborated in a way that the total value added is reflected to represent how it's distributed among the stakeholders of the firms as well. When this broader definition proposed by Donaldson and Preston (1995) is adopted, the change in retained earnings for the year (R) is calculated by deducting brought in materials and services or cost of goods sold (B), depreciation (DP), wages or employee salaries (W), Interest to debt holders (I) dividends, (DD) and taxes (T) from the net sales revenue (S) as it's illustrated in the equation (2). Once the equation is rearranged to reflect the net value added it consists with: wages paid to employees, interest paid to debt holders, dividends paid to shareholders, taxes paid to the government, and the retained earnings attributable finally to the shareholders of the firm (equation 3). When dividend and change in retain earning added together in the net income for attributable to the shareholders (NI) the total value added composition is given using the equation (4). In order to calculate the investment in human capital from firm value added point of view, human capital per value added is calculated by dividing the total human resource

expenditure (HRE) of the firm by the firm value added (equation 5). Even though this is different from the conceptualization in Pulic (1998 and 2000), the methodology for using this can be justified from human capital theory point of view as this research uses the coefficient as a proxy for investment in human capital than the efficiency parameter to human capital investment. It particularly consider how much of the firm value creation is actually distributed to the employees of the firm.

$$\mathrm{VA} = \mathrm{OUTPUT} - \mathrm{INPUT} \tag{1}$$

$$\mathrm{R} = \mathrm{S} - \mathrm{B} - \mathrm{DP} - \mathrm{W} - \mathrm{I} - \mathrm{D} - \mathrm{T} \tag{2}$$

$$\mathrm{S} - \mathrm{B} - \mathrm{DP} = \mathrm{W} + \mathrm{I} + \mathrm{D} + \mathrm{T} + \mathrm{R} \tag{3}$$

$$\mathrm{VA} = \mathrm{W} + \mathrm{I} + \mathrm{T} + \mathrm{NI} \tag{4}$$

$$\mathrm{HCVA} = \frac{\mathrm{HCE}}{\mathrm{VA}} \tag{5}$$

3.6.1.2 Human capital disclosure and disclosure index

Using self reported disclosure as method to measure firms' involvement in activities creating value has a long history in corporate financial reporting field. The same method has been expanded in addressing firm involvement in corporate social responsibility, intellectual capital development, human capital investment etc.

(Abbott and Monsen, 1979; Williams, 2001 & 2004; Ax and Marton, 2008; Bouten et al., 2011; Abdolmohammadi, 2005; Abeysekara, 2006, 2008 & 2010).

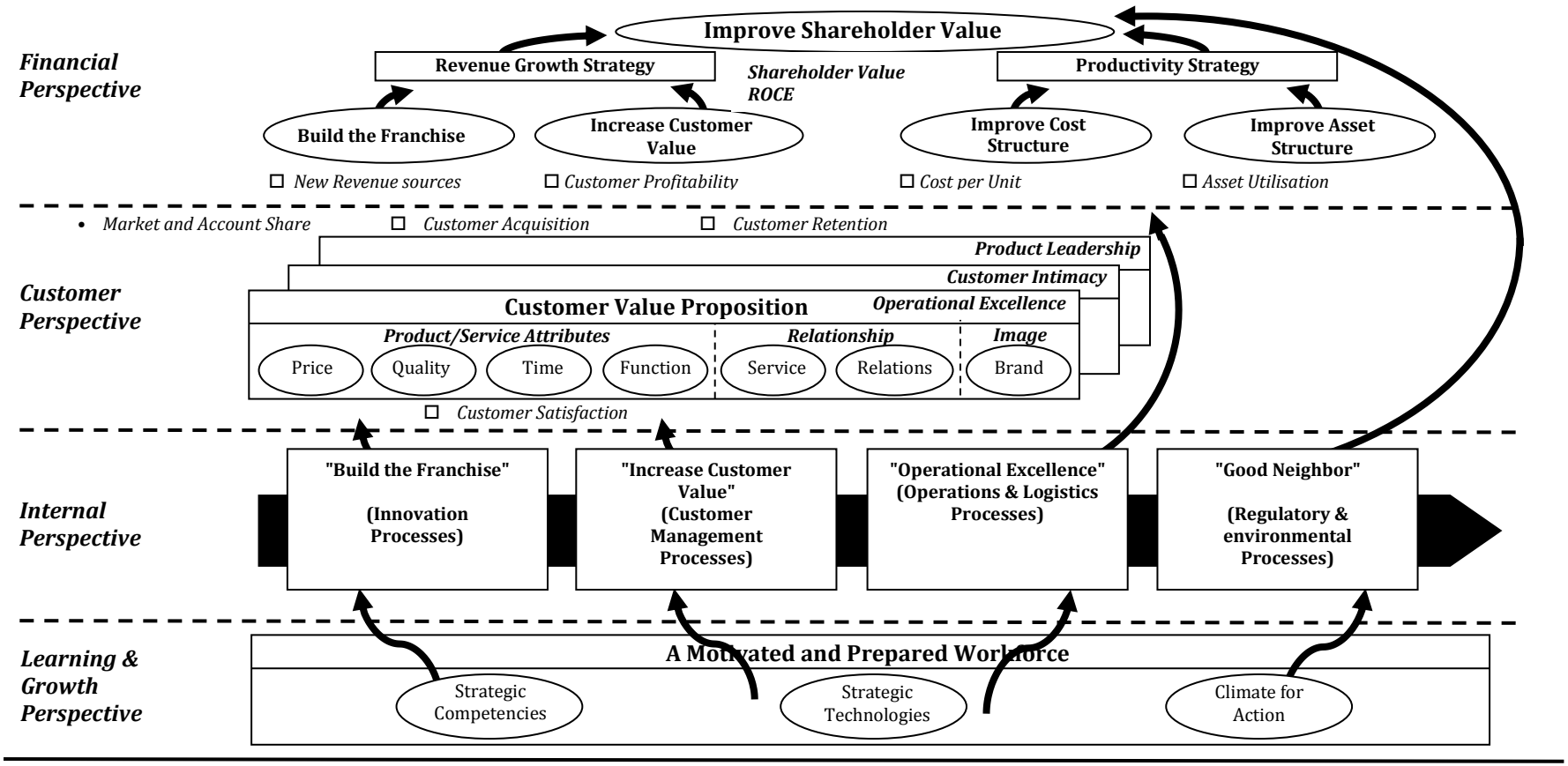
According to the human capital disclosure related studies conducted all over the world, researchers have gone through many human capital attributes, value creation factors or disclosure items and it does not seem that there is a consensus among factors or attributes used by researchers (Ax and Marton, 2008; Abeysekara, 2008; Longo and Mura, 2007; Olsson, 2001; Subbarao, and Zeghal, 1997) or even the direction these studies heading. Further, the disclosure in terms of quantity and quality and the impact of disclosing these attributes on decision-making and on different financial and non-financial outcome also varies hugely. Many human capital disclosure studies have developed and adopted a variety of disclosure indices though there is no consensus among them (Bassi and McMurrer, 2005; Abeysekara and Guthrie, 2004; Abeysekera, 2006; Abeysekera and Guthrie, 2005; Subbarao and Zeghal 1997; Ax and Marton, 2008; Lajili and Zeghal, 2006). Even though researchers have taken efforts to categorise disclosure items using statistical techniques such as factor analysis (Huang et al., 2007), that has not always been possible with qualitative phenomenon such as intellectual capital or human capital investment related disclosure, motivating researchers to look for some meaningful criteria for categorisation of items. Therefore in this study, a human capital disclosure index is developed using the balanced scorecard framework and value creation perspective. In addition to quantitative variables, the qualitative attributes disclosed addressing different stakeholders via annual reports are categorised according to the balanced scorecard perspectives (Kaplan and Norton, 1992) as a disclosure index. This will serve as a proxy for the human capital disclosure

reflecting the financial reporting recognition of human capital investment of firms. The use of the balanced scorecard has been justified by subsequent studies (Marr et al., 2004) as well, highlighting that the visual representation of strategic intent via practices such as corporate financial reporting facilitates the understanding of how, organisational resources especially intangible assets and intellectual capital are used to create value.

Since there is no reporting framework governing human capital reporting and they have all been spread throughout the annual reports (Abeysekara and Guthrie, 2004; Abeysekera, 2006; Abeysekera and Guthrie, 2005; Subbarao and Zeghal 1997; Ax and Marton, 2008; Lajili and Zeghal, 2006), there has been a necessity to develop a logical framework to summarise and reflect the overall human capital disclosure of the firms. Developing human capital disclosure index has been a widely accepted methodology so far though the criterion used to develop indices have not been clear and logical (Longo and Mura, 2007). Remedying this and reflecting the value creation by employees, the balanced scorecard mechanism developed by Kaplan and Norton (1992 and 2001) has been adopted in developing the human capital index in this study (figure 3.04). Balanced scorecard framework has been applicable not only as a tool of managing the intellectual capital but also a framework having a vision of continuous learning and change to reflect and create value for the future (Johanson et al., 1999). Ultimately, human capital information is conceptualised in a way that the sub components are categorised under the four perspectives, innovation and learning perspective, financial perspective, customer perspective and internal business perspective (Kaplan and Norton, 1992 and 2001).

The same concept balanced scorecard has been adopted by Becker et al. (2001) in developing the human resources score card resembling the employee value creation under strategic human resource management and it can be illustrated via the balanced scorecard strategy map in value creation (Figure 3.05). According to the balanced scorecard strategy map in value creation, learning and growth perspective is aimed at developing, motivated and well prepared workforce for firm, which can be employed in enhancing the efficiency and the effectiveness in the internal business process of the firm. Efficient and effective internal business process in fact leads to higher customer satisfaction, while it directly contributes in positive operational and financial performances and result in improved shareholder value. Ultimately, the higher level of customer satisfaction as well contributes in improving the shareholder value via increased operational and financial performances. Therefore, Balanced Scorecard is identified as a proven technique in strategic human resource management, thus the same undoubtedly can be applied as a financial reporting framework as well in representing firm value creation by employees via human capital disclosure of the firm, particularly since balanced scorecard systematically illustrate the contribution of employees in shareholder value creation. The four perspectives of balanced scorecard are illustrated highlighting, how each of them represents contribution of firm value creation by employees.

Figure 3.05: Balanced scorecard strategy map in value creation



Source: Kaplan, R. S. and Norton D.P., (2001), Commentary, transforming the Balanced scorecard from performance measurement to strategic management, part 1, Accounting horizons, vol.15, No. 1, pp. 87-104.

Learning and growth perspective

Based on the learning and growth perspective of "can we continue to improve the knowledge capital and create value" (Kaplan and Norton, 1992, p. 75), the relevant human capital disclosure attributes are summarised and categorised as value creation factor under this perspective. Attributes used by different researchers: employee know-how or competencies, educational qualification, vocational qualification, career development, entrepreneurial spirit and innovations, employee training programmes, employee motivation and employee experience have been summarised and categorised under the learning and growth perspective (table 3.01) (Holmen, 2005). These factors basically reflect the human capital employees originally bring to the firm with them and the firms attempt to develop the capital accumulated directly with employees, which will be the foundation for the human capital development of the firm according to number of human capital theories (Burton-Jones, 1999; Graham, 1981).

Internal business process perspective

The internal business perspective of what must we excel at? (Kaplan and Norton, 1992) is related with many of the human capital related attributes as illustrated in the table 3.01. Attributes relating to internal business process according to previous studies: employee health and safety, employee appreciation, employee numbered and demography analysis, employee feature representation, human resource management and human resource function, human resource management director committee,

work environment and employee culture are categorised under this perspective. These value creation factors explain how the human resource management process is designed based on the human capital foundation explained in the previous perspective in a way that it reflect the firms' human capital investment. While all the factors contribute in firm value creation process, some of them such as culture have been understood especially as apart of firms' human capital (Flamholtz, 2005).

Customer perspective

In terms of the customer perspective of "how do customers see us?" (Kaplan and Norton, 1992, p. 73), disclosure attributes on people aiming customers is considered as a separate sub category under the disclosure index. Since existing and potential customers, existing and potential employees and even the community become a part of customer base either internal or external, at some certain point of time, human resource disclosure items such as employee involvement in community, employee diversity and equity issues relating to the race, gender, religion disability etc. industrial relations and union activities, employee satisfaction and loyalty and employee welfare and benefits were considered as disclosure items relating to the customer perspective of the firm. Considering the previous literature, some of the modifications to the already studied attributes have been done such as treating the employee equity issues under one attribute rather than having many to represent the age, gender, disability, nationality, department, etc. to make the disclosure index less complex (Subbarao and Zeghal, 1996; Ax and Marton, 2008).

Financial perspective

Quantitatively and qualitatively disclosed attributes relating to financial perspective such as employee share scheme, employee share option scheme, value added per expert, value added per employee, revenue per employee, executive compensation plan, employee compensation plan, and employee expenses and pension are summarised and categorised as value creation factor under the financial perspective and they are used in the development of the disclosure index illustrated in the table 3.01. These attributes have been adopted from studies conducted in different context by different researchers (Apendix 1) and integrated with the other three perspectives and formed by way of a disclosure index, which will act as proxy for the human capital disclosure reflecting the accounting and financial reporting recognition of firms investment in human capital. A summarised version of above attributes reflecting firm value creation is used in this study and a complete illustration of value creation factors is given in the table 3.01.

Table 3.01: Human capital value creation factors

Financial perspective	Employee compensation plan including share schemes[1,3,4,6] Value added/revenue per employee, [1,2,3,6] Employee expenses and Pension[3,6]
Customer perspective	Employee involvement, [1] Employee diversity and equity issues [1,3,4,5,6] Industrial relations and union activity[1,3,4,5] Employee welfare and benefit[1,3,4,5,6] Employee satisfaction and loyalty[7]
Internal business process perspective	Employee health and safety[1,3,5,6] Employee appreciation[1,3,4] Employee numbered[1,3,6] Employee featured[1,3] Human resource section and human resource functions[3,6] Human resource director committee[3] Work environment and culture of employees[6] Value added strategy[6]
Learning and growth perspective	Employee know-how and competency[1,2] Education and vocational qualification[1,2,4,6] Career development[1,4,6] Employee training programme[1,3,4,5,6] Employee experience[2] Entrepreneurial spirit and innovation[1,4,5] Employee motivation[7]

([1]Adopted by Abeysekara and Guthrie, 2004
[2] Sveiby, 1997
[3]Subbarao and Zeghal, 1997
[4]Boedker, et al., 2004
[5]Abeysekara, 2008
[6]Ax and Marton 2008
[7] Huang et al., 2007)

Based on the value creation factors categorised under each of the above perspectives, the use of them as separate human capital indices are defined and interpreted with the strategic importance of monitoring them under voluntary human capital disclosure. This is illustrated in the table 3.02 below.

Table 3.02: Definition and strategic importance of human capital indices

Categorical Human capital indices	Definition and interpretation	Strategic importance of monitoring
Financial	Value creation for employees of the firm reflected via the Financial value added for the employees of the firm	This index covers the ultimate financial reflection of all employee related transactions.
Customer	Value creation by the employees via emotional attachment of the employees for the firm and developing a unique value preposition via interpersonal relationships of the employees	This index covers the additional value creation through employees via developing a unique value preposition through employee relations satisfaction and organisational citizenship behaviour
Internal /business process	Value creation for the firm via the enhancement of the internal business process reflecting a favourable employment atmosphere.	This index covers all the value creation factors associated with the functional and operational aspects of human resource management to create and enhance efficient and effective environment.
Learning and growth	The fundamental value creation by employees via continuous employment and employee creation and development within the firm.	This index covers the fundamental aspects in employee training, development and bringing a person to an effective employee of the entity and this becomes the basis for the entire human resource management function

Previous empirical evidence revealed to priori grouping of disclosure items could be confirmed through statistical analysis techniques such as factor analysis or principle component analysis (Huang et al., 2007). However, due to the limitations these statistical approaches are having in conceptualising a qualitatively explained phenomena such as financial reporting recognition of investment in human capital, this study classify human capital value creation factors according to the balanced

scorecard framework, considering the impact of each on the value creation and relevance in the human capital development of the firms.

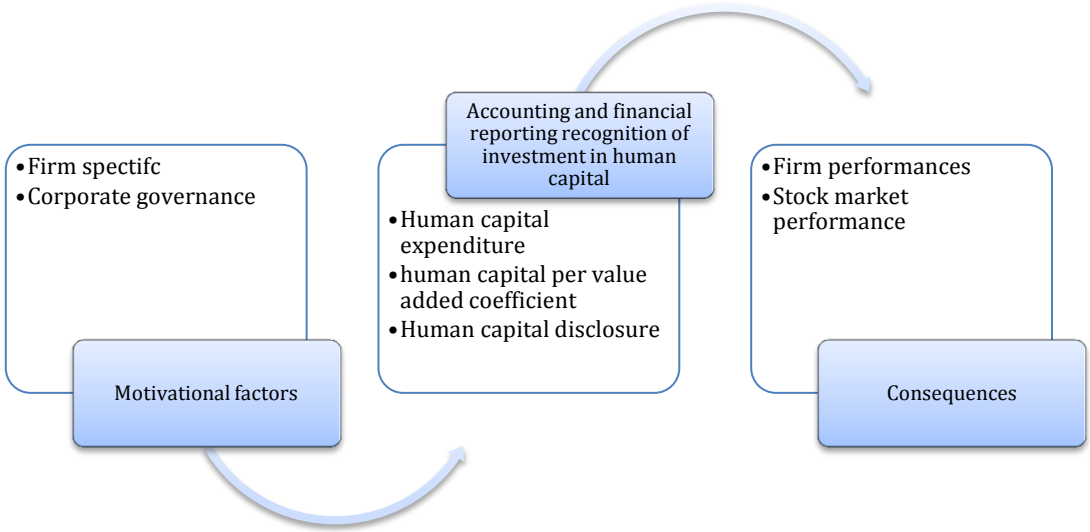
3.6.2 Determinants and consequences of investment in human capital

In addition to capturing the variation of the proxies reflecting the accounting and financial reporting recognition of human capital investment proposed above, the conceptual framework is expanded with the aim of achieving the research objectives of what determine the accounting and financial reporting recognition of investment in human capital of the firms and (2) what are the consequences of accounting and financial reporting recognition of investment in human capital of the firms, measured using the proxies: human capital expenditure, human capital per value added coefficient and the human capital disclosure index. The complete conceptual framework is illustrated in the figure 3.06.

Review of the empirical evidence revealed that there is a huge variance in accounting and financial reporting recognition of intellectual capital development aspects in general (Barako et al., 2006; Abeysekara, 2008 and 2010; Abeysekera and Guthrie, 2004; Cuganesan, 2006) or investment in human capital in particular (Ax and Marton, 2008; Hossain et al., 2004; Iatridis, 2008) considering the information disclosed in firm annual reports. According to the literature review, this variance has been attributable to: the firm specific factors, regulatory mechanism and corporate governance mechanism of firms. Considering these evidence, determinants of firms investment in human capital measured using human capital expenditure, human

capital per value added coefficient and voluntary human capital disclosure is estimated in explaining the variability observed (Figure 3.06).

Figure 3.06: Conceptual framework of the study



Following the same concept observed in the human capital theory featured in figure 3.03, which illustrates that provision of formal education and schooling, vocational training, general or firm specific on the job training, and other knowledge and experience acquired (Zula and Chermack, 2007) are treated as an investment in human capital of the firm, firms spending on employees as well is assumed to be a reflection of human capital investment. This investment tends to generate increased productivity and profit as well as increased wages and income. Proving this argument, researchers have revealed that investment in employees and other intangible asset enhances firms' operational and financial performances while contributing to enhance the firm value creation (Chen et al., 2005; Iatridis, 2008; Collett and Hrasky, 2005; Bassi et al., 2004; Dumay and Tull, 2007; Chan, 2009 a

and b). Further, due to the fact that firms, which tend to invest more on employee as well as recognise them as the value drivers of the firms, subsequently enjoy higher stock prices, the stock return was selected as one of the dependent variable to be examine as an impact of human capital expenditure and the disclosure (Bassi et al., 2004). The results revealed that the forward interaction explained above have accounted for a considerable portion in explaining the variation in the investment in human capital of the firms.

Accordingly, accounting and financial reporting recognition of the investment in human capital of firms measured using the proxies human capital expenditure (Lev and Schwartz, 1971; Brummet et al, 1968; Flamholtz, 1972a & b; Edvinsson, 1997; Sveiby, 1997), human capital per value added coefficient (Pulic, 1998 and 2000; Chan, 2009a and b; Chen et al., 2005; Tan et al., 2008) and human capital disclosure index have taken the states of independent and dependant variable depending on the stage of the study.

3.7 CONCLUSION

A thorough study of the concepts: human capital, human capital theory and theories explaining accounting and financial reporting practice in listed firms, through the analysis of theoretical and empirical studies helped develop the proxy variables reflecting the accounting and financial reporting recognition of the human capital investment of the firms. These proxies were derived reflecting the firms' investment in human capital in a way that they reveal the variance in relation to the human

capital expenditure, human capital per value added coefficient and human capital information disclosed in the annual reports. Moreover, the conceptual framework is designed to reflect firm value creation by the employees as well. According to the critical evaluation of the theories explaining firm and the accounting and financial reporting process it is evidenced that all the theories standing alone has the potential to explain accounting and financial reporting recognition of firms investment in human capital with some limitations, unique to each other. Addressing this limitation, a combined framework, which consists with, agency theory and the two branches of political economy of accounting theory: stakeholder and legitimacy theories are adopted to explain the scenario. This combined framework is assumed to possess more explanatory power compared to an individual theory on it's own (An et al., 2011). This particularly is the case due several reasons such as increasing involvement of the number of stakeholders since employee is the centre of the nexus of firm relationships, the politicisation of the firm decision-making process, versatile nature of the relevance of the subject matter human capital demanding a holistic picture, i.e. a 360 degree coverage on investment in human capital etc..

In addition to the human capital expenditure and the human capital per value added derived through the financial statements, qualitative information disclosed in the annual reports through the corporate reporting as well is considered as an aspect of financial reporting recognition of the human capital investment. Careful analyses of intellectual capital management frameworks proposed balanced scorecard approach (Kaplan and Norton, 1992) as the most appropriate in reflecting the firm value creation via employees as it takes in to account the employee contribution in firm

value creation systematically from learning and growth perspective, internal business process perspective, customer perspective and ultimately the financial perspective.

In explaining the variability in investments in human capital via accounting and financial reporting recognition using proxies: human capital expenditure, human capital per value added coefficient and human capital disclosure, variability is captured both backwards and forwards by looking at determinants of investment in human capital of firms as well as the consequences expected via investment in the human capital of the firms. Accordingly, the research phenomenon is conceptualised and the framework is developed linking with the research questions and the objectives. Referring to the conceptual framework developed above, the next chapter outlines the research philosophy and the methodology adopted in achieving research objectives. It further covers, refining the variables according to the conceptual frameworks and the hypotheses development based on the causal relationship between variables.

CHAPTER FOUR

METHODOLOGY

4.1 INTRODUCTION

Literature review chapter explored the evolution and development of the concepts human capital, investment in human capital and accounting and financial reporting recognition of investment in human capital via theoretical and empirical studies. Conceptualisation chapter, on the other hand, justifies measuring firms investment in human capital using the proxies: human capital expenditure, human capital per value added coefficient and the qualitative human capital information disclosed voluntarily in a way that it reflect firm value creation while proposing integrated theoretical framework that could be adopted in explaining the accounting and financial reporting recognition of firms investment in human capital. Amalgamating the conceptual framework and theoretical justifications, together, methodology chapter illustrates, how the research is carried out addressing the research gap. Therefore, chapter starts with defining research philosophy on which the complete methodology is framed, followed by research paradigm, ontology and epistemology considerations leading to research approach and the strategy. In developing the research strategy and the hypotheses to be tested, the general conceptual framework developed in the end of the previous chapter is elaborated further in a way that variables and measurements are refined reflecting causal relationships.

4.2 RESEARCH PHILOSOPHY

The research philosophy of thesis has basically been illustrated using one of the mostly applied scientific solution framework, Burrell and Morgan (1979), which help understand broad schemes of social science and particularly organisational studies as the primary mechanism of explanation (Lakomski and Evers, 2011; Laughlin, 1995). Considering different approaches to the study of organisations, organisational theories are based on two basic sets of assumptions: philosophy of science and theory of society (Burrell and Morgan, 1979). Combination of these two assumptions about the society and science, determines the assumptions and the characteristics of the research undertaken. Moreover, the subsequent research process, to a greater extent, depends on the choice of the researcher i.e. where to stand in this spectrum though it may not be very explicit always. Considering the nature of science, social science is conceptualised using four sets of assumptions relating to ontology, epistemology, human nature and methodology. Similarly, a separate set of assumption is used to understand the nature of the society. The research philosophy adopted is illustrated in light of the applicability of these assumptions.

Ontological assumptions imply that reality under the issue of investigation is based on two ways, whether, internal to the individual investigating (i.e. a product of one's own mind), which is subjective in nature; or external to the individual investigating (i.e. out there in the world), which is objective. This is understood to be a spectrum leading from one ends to the other rather a two-point scale (Burrell and Morgan, 1979). Considering the ontological assumptions relating to the previous studies on

investment in human capital, they are witnessed standing on all over the spectrum covering even the two extremes as some researchers have believed that the reality is out there in the world measured and presented directly as human resource expenditure or labour cost incurred (Brummet et al., 1968; Lev and Schwartz, 1971; Grojer, 1997; Grove et al., 1977), value added human capital efficiency (Pulic, 2000; Chen et al., 2005; Chan, 2009a and 2009b; Nazari and Herremans, 2007). Whereas, others have attempted to synthesise it using, their own cognitive understanding through the interpretation of qualitative disclosure of human resource information (Abeysekera, 2008; Hossain et al., 2004). In certain instances, researchers have attempted to use combined approaches by positioning themselves somewhere in the middle of this spectrum rather than being at either end (Ax and Marton, 2008). Despite ample research evidence on human capital measurement and theories (Lev and Schwartz, 1971; Flamholtz 1971, 1972a and b), due to the undefined nature in human capital concept (Abeysekera, 2008; Abeysekera and Guthrie, 2004), this study on accounting and financial reporting recognition of investment in human capital, it is assumed that the reality is externally available to a certain extent while the researchers need to use the cognitive understanding to conceptualise the complete phenomenon as well. However, the degree to which each assumption becomes valid and where to compromise is still argumentative.

Epistemology assumptions are about the ground of knowledge explaining how the reality is understood and communicated as knowledge to rest of the human beings. Resembling the two extremes in the spectrum mentioned above, whether knowledge could be personally experienced using one's own mind or readily acquired through externally available sources represents the epistemology assumptions and based on

the degree of each, again the researcher will stand in any point in the spectrum (Burrell and Morgan, 1979). Believing the argument that the knowledge is readily available (i.e. financial figures such as payroll cost, employee expenses directly reflect the firms human capital investment) to use in decision making, many researchers attempted to measure the value of the human capital (Brummet et al., 1968; Lev and Schwartz, 1971; Flamholtz 1971, 1972a and 1972b; Lepak and Snell, 1999 and 2002) or human capital efficiency parameters (Pulic, 2000) using these readily available information. Moreover, they have attempted to use these measurements for decision-making (Chen et al., 2005; Chan, 2009a and 2009b; Nazari and Herremans, 2007). However, in this study, considering both these aspects firms investment in human capital is conceptualised using accounting and financial reporting recognition of human capital investment reflected through hard accounting figure, human resources expenditure and the soft accounting information recognized voluntarily in firms annual reports, recognition of which require a careful examination of the human capital related value creation factors and attributes in order to quantify. In this case, knowledge on informally and voluntarily disclosed information on human capital investment couldn't be readily acquired, but understood using the cognitive domain of the researcher to utilise in subsequent decisions (Abeysekera, 2008; Abeysekera and Guthrie, 2004; Hossain et al., 2004) positioning the researcher again in the middle of the spectrum.

Human nature assumption coming under the research philosophy, on the other hand, associates with ontology and epistemology but conceptually separated from them. Under this as well, a spectrum is found regarding the assumption about relationship between human being and the environment. On one end it's believed that, human are

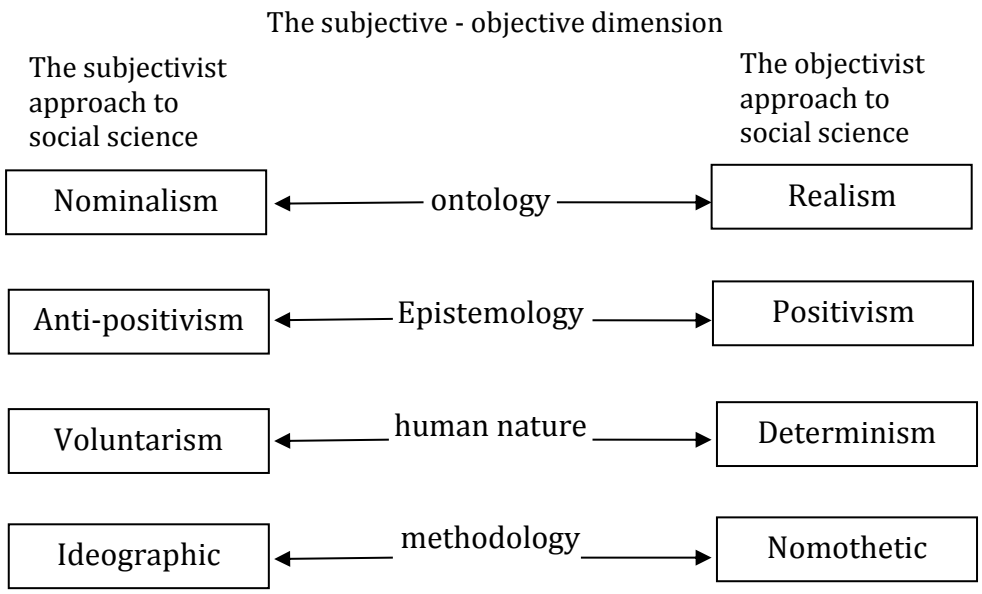
conditioned by the environment, which is explained as determinism in work attitudes. Whereas, the other end represent voluntarism attitude, explaining that human beings are more a creative role (Burrell and Morgan, 1979). This can even be explained using the similar argument theory X and theory Y in human behavior (McGregor) and the classical vs. human relations approach to management (Bennis, 1958). Even though there are social theories explaining the extremes of this spectrum, mostly it's believed that the actual situation lies in the middle. Considering the subject matter employee and investment in human capital, theories such as transaction cost believes in minimizing the transaction cost involved in human resource management function of the organisation and this is represented even via the current accounting standards of the firms as the total amount spent on employees are written off as an expenditure (Chen and Lin, 2004). Whereas, the belief that employee offers some thing more to the firm and they actually create value for the firm supported the arguments on human capital theory (Elias, 1972; Brummet et al., 1968; Lev and Schwartz, 1971; Flamholtz, 1971, 1972a and b).

On the other hand, human nature assumptions also help formulate the data collection mechanism of the study. As an example, determinism believes that information produced by individuals reflects concepts as it is without being affected by the subjectivism, as they are only environmentally framed. On this ground, researchers believe that use of externally available information such as human resources expenditure in financial statements and information disclosed in annual reports as it is, with no cognitive synthesis (i.e. number of words, number of sentences, line count etc.) (Abeysekera, 2008; Abeysekera and Guthrie, 2004), explains the organisational reality as it is leaving even a methodological gap. On the contrary,

due to the creative role of individuals, voluntarism believes that information are best be cognitively synthesised, thus an in-depth analysis of information provided in the annual reports using cognitive domain and conducting interviews rather that just relying on publicly available information, better explains the reality. Since the real world practice has reflected a compromise by combining the conventional accounting treatment with voluntary information disclosure reflecting the employee value creation (Bassi and McMurrer, 2005), the study as well is focused on human resource expenditure, voluntarily disclosed human capital information cognitively synthesised for the content and the extent of disclosure using balanced scorecard framework.

All the three philosophical assumptions (Burrell and Morgan, 1979) discussed above have direct implications on methodology and the entire research process of the study. Accordingly, the relative position of the researcher on each of the above spectrum determined the methodological considerations in terms of whether the researcher takes a subjective or objective approach to the study (figure 4.01). Moreover, being in the middle of the spectrum, combining both subjective and objective domains involve the triangulation of the research process. Many previous researchers have claimed that triangulation improves the research findings and applicability by providing a richer and holistic understanding (Bechara and Van de Ven, 2011) while improving the validity of the findings (Ax and Marton, 2008).

Figure 4.01 Scheme for analysing assumption about nature of science



Source: Burrell, G. and Morgan, G., (1979). Sociological paradigms and organisational analysis, London, Heinemann. p.3.

According to Burrell and Morgan (1979), nature of society completes the second dimension in explaining the research philosophy. Similarly, nature of society as well has been explained with the use of assumptions, whether the society operates in accordance with, either social order and equilibrium or problems of change, conflicts and social change in the social structure, this again acts as a spectrum allowing researchers to position them selves. The status of social order provides an integrationists view of society characterized by stability, integration, functional coordination and consensus. Whereas, conflict or regulation provides a coercion view of society characterised by change, conflict, disintegration and coercion. Society, depending on the many factors, takes the form of combination of the above though at varying degree moving towards either side of the spectrum.

Human capital arguments tend to initiate along with questioning the social structure by many of the pioneering classical economists (Dooley, 2005). It has been argued under the mostly familiar, Marxist labour theory of value, which was even highlighted under the communist manifesto (Marx and Engels, 1848). Similarly even human capital theory challenged the existing scenario urging firms to properly recognize the firms' investment in human capital. Most of the initiatives emerged subsequent to Marxist Labour theory of value proposing capitalizing on firms human capital investment (Elias, 1972; Flamholtz, 1971, 1972a and b; Lev and Schwartz, 1971) however, have been isolated over several decades from the practical world demoralizing the academics and researchers. This has even been evident via the government and regulatory resistant for the attempts of recent researchers (DTI, 2003a & b) to formalize the practice (Roslender and Stevenson, 2009; Roslender et al., 2004; Roslender and Dyson, 1992; Roslender; 1997; Flamholtz et al., 2004).

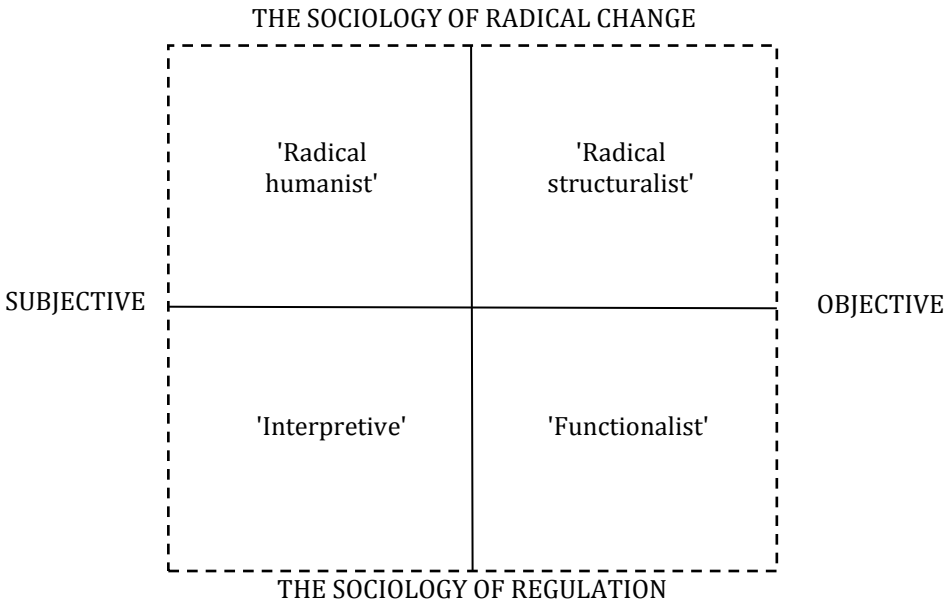
However, some major events took place in the recent past: economic crisis, major financial scandals, increasing worldwide unemployment and large scale job redundancies, etc. reflects that the society is characterized to a certain extent by radical change via the reflection of structural conflicts, modes of domination, contradiction, emancipation, deprivation and potentiality rather than the sociology of regulation characterized by status quo, social order, consensus, social integration and cohesion, solidarity, need satisfaction, actuality etc.. It proves the fact that organisational and the social structure perceived by society is in a conflict or questionable state than in proper order demanding attention for further studies from different research paradigm.

4.3 RESEARCH PARADIGM

According to the framework developed by the Burrell and Morgan (1979), the relative position of a researcher in the above two dimensions (nature of science considered as subjective vs. objective spectrum and the nature of society considered as regulation vs. radical changes dimension) defines the sociological paradigm the researcher belongs in analysing organisational theories. The four major research paradigms derived using this framework is illustrated in the figure 4.02.

The four research paradigms are radical humanists, radical structuralist', interpretive and functionalist and there have been instance where researchers have shift from one paradigm to the other due to the changes in the basic assumptions relating to the nature of science or the nature of society. However, they are understood in a way to be mutually exclusive implying that one cannot operate in more than one paradigm at the same time (Burrell and Morgan, 1979). Functionalist' paradigm is rooted in sociology of regulation where the subject matters are approached in objective way while interpretive' is rooted in the same sociology of regulation even though the subject matter is approached in a subjective way. The radical humanist paradigm is where the studies of young Marx belongs reflecting sociological roots of radical changes approached subjectively whereas, the studies of mature Marx operates in radical structuralist' paradigm rooted in the same sociological roots of radical change, however, approached objectively, implying that one can change the paradigm with the change in assumptions experience etc.. Considering the two dimensions researchers have had the choice for the paradigm they opt to belong.

Figure 4.02: Four paradigms for analysis of the social theory



Source: Burrell, G. and Morgan, G., (1979). Sociological paradigms and organisational analysis, London, Heinemann. P. 22.

Subsequently, Laughlin (1995) further enhanced the above research paradigm model by using three-dimensional approach, allowing paradigms to be rather specific to the scenario. The three dimensions include (1) theory choice: considering the level of prior theorisation measured at three different levels low medium and high; (2) methodological choice: considering the level of theoretical nature of the methods measured as three different levels same as above; and (3) change choice: considering the level of emphasis given to critique of status quo and need for change measured using the same criteria (Figure 4.03). Considering the level of measurement under each of the dimensions, all possible schools of thoughts studied are categorised under the framework below.

Figure 4.03: Characteristics of alternative school of thoughts

Methodological choice: level of theoretical nature of methods	Theory choice: levels of prior theorization: High	Medium	Low
High	Positivism (L) Realism (L) Instrumentalism (L) Conventionalism (L)		
Medium		German critical theory (M)	Symbolic interactionism (Kuhn) (L)
Low	Marxism (H)	Structuration (L) French critical theory (L)	Pragmatism (L) Symbolic interactionism (Blumer) (L) Ethnomethodology (L)

Change choice: level of emphasis given to critique of status quo and need for change (high/medium/low)

Source: Laughlin, R., (1995). Methodological themes: Empirical research in accounting: alternative approach and a case for "middle-range" thinking, Journal of accounting, Auditing and Accountability, Vol. 8, No. 1, p. 50.

According to Burrell and Morgan (1979), the functionalist paradigm proved to be providing a dominant framework in the academic sociology and organisational studies. Since the society is attempting considerably to maintain order and regulation compared to previous days particularly in balancing the interest of organisational stakeholders and the increase in number stakeholders of firms looking for more objective and unbiased mechanism in organisational studies (Baker and Wallage, 2000; Laughlin, 1995), functionalist paradigm seems allowing researchers to be in the paradigm demanded by many stakeholders though not explicitly. Moreover, due to the nature of capturing the organisational phenomena as described via many management and organisational theories, and the fact that it is difficult to decide one is better than the other, it is understood to be as highly pragmatic or utilitarian in nature as well.

In order to capture accounting and financial reporting recognition of firms' investment in human capital, functionalist paradigm was understood to be most appropriate based on Burrell and Morgan (1979) framework. Considering the characteristics and overlapping of criterion used in defining paradigms based on both frameworks (Burrell and Morgan, 1979; Laughlin, 1995), the research paradigm in this study is understood to be a mix of the positivism and functionalist. However, as it is explained in the ontology and epistemological consideration, the assumptions have never been confined to the extreme ends under each dimension, objectivism and society of regulation making the paradigm pure positivist or functionalist. This confirm the fact that positivism is not an abandonment of subjectivism (Comte, as cited by Laughlin, 1995), rather a balanced amalgamation of rationalism and empiricism which would allow the researcher, describe the empirical world in a way it's distinct from the observer bias and separated from the observers' desire or attitude towards need for change, since critique and desire for change is value driven and not a part of positivism. Moreover, Laughlin (1995 p.73) has explained Comte's positivism as " a tightly defined rational deductive process coupled with similarly clear rules on how to observe empirical world - objectively as values and bias played no part in the make up of positivism".

However, empirical studies on human capital revealed that researchers have moved from solid economic accounting perspective to social scientific perspective in which case practitioners as well as researches tend to provide and study more on qualitative information on investment in human capital and firm value creation via employees through voluntary disclosure. Therefore, in studying accounting and financial reporting recognition of investment in human capital, neither of these ends are

sacrificed as both human capital expenditure and firm value creation via employees through voluntary disclosure are defined as the key components in developing the conceptual framework.

Human capital expenditure as a concept has been well defined as it's a part of financial accounting mechanism of firm. However, considering firms' human capital disclosure, even though some theories accommodate the explanation on the practice, due to the voluntary nature there were no standard mechanisms in disclosing human capital information as a part of financial reporting. As a result information has literally been scattered all over the annual reports (Abeysekera, 2008; Abeysekera and Guthrie, 2004; Abhayawansa and Abeysekera, 2008). Human capital expenditure data are readily available to collect through the expenditure categorisation of annual reports. Whereas, human capital disclosure had been conceptualised in a way that it is reflect the investment in human capital and firm value creation via employees. Though qualitatively disclosed human capital information is utilised as data, since they are quantified as a disclosure index using a standard theoretical framework as it was in the previous empirical studies (Abeysekera, 2008; Abeysekera and Guthrie, 2004), the study mostly adhere to the assumptions in positivism and functionalist research paradigm. Further, human capital concept and empirical studies undertaken so far have shared many key characteristics of the dominant school of thought positivism, while there are some slight deviations in addressing the human capital disclosure issue (Laughlin, 1995). Based on the theoretical framework and the key schools of thoughts belonging to the research paradigm, the research approach is determined and the link between these two aspects are illustrated in the table 4.01 below.

Table 4.01: Positivist school of thought in human capital study

	Research approach	**School of thoughts under positivism**	**Relevance in Human capital research**
Theoretical characteristics	Ontological belief	Generalizable world waiting to be discovered	With the number of theoretical frameworks available a general consensus on human capital is a timely requirement. However, discovery of current practice on human capital accounting is needed prior to achieve consensus.
	Role of theory	Definable theory with hypotheses to test	Hypotheses testing is possible given the rich theoretical framework and practice based on standards though the absence of consensus in human capital disclosure practice perhaps demand new theories. (In depth analysis of disclosure would be an exemption)
Methodology characteristics	Role of observer and human nature belief	Observer independent and irrelevant	There is a necessity to be observer independent due to the expected balance between multiple stakeholder interests in and the multiple roles of people. However, understanding the qualitatively disclosed human capital information requires and involves subjective judgment as well.
	Nature of method	Structured quantitative	Rigorous theorisation and conceptualisation of the concepts and variables, highly structured and quantitative mechanisms need to be adopted. Even qualitative disclosure of human capital is analysed quantitatively through disclosure indices. Use of the balanced scorecard framework forms the qualitative analysis well structured as well.
	Data sought	Cross sectional data used usually at one point in time and selectively gathered tied to hypotheses	Cross sectional data collection is given the priority for a selectively gathered sample. However, longitudinal impact as well is incorporated via panel data analysis. Involve qualitative data collected through annual reports as an exemption.
	Conclusions derived	Tight conclusion about findings	Strong conclusion about the findings via hypotheses testing and statistical significance on the current human capital investment practices. Human capital disclosure practice needs further theoretical enhancements. (Interpretation of descriptive and exploratory analysis results could be questioned)
	Validity criteria	Statistical inference	Statistical inference in data diagnosis and inferential analysis. Descriptive and exploratory analyses have facilitated the triangulation of findings.
Change characteristics		Low emphasis on changing status quo	Low emphasis on changing the status quo, while profoundly emphasising on accountability.

4.4 RESEARCH APPROACH

Research approach generally relies on the method of reasoning adopted by researchers in explaining the selected phenomenon and it can either be inductive reasoning or deductive reasoning (Saunders et al., 2007). Corresponding to everyday reasoning, inductive reasoning involves the use of specific observations to build up general phenomenon or theory which could later be utilised in explaining the variance in specific reasoning as well (Feeney and Heit, 2007). As a result, it is based on the principle of developing theories after data have been collected (Saunders et al., 2007). As opposed to this, in deductive reasoning, general theories are used to explain specific scenario deriving empirical conclusions. Hence, it's clear that in deduction theoretical position is developed prior to data collection (Saunders et al., 2007). While inductive researches take forms of descriptive and exploratory, deduction will be more explanatory in nature, where theories available are used to explain the relationship between different phenomenon. In situations where the theoretical frameworks are limited to substantive theories restricted to some specific situations or problem and not grand theories (Saunders et al., 2007), it perhaps is hard to use them in deductive approach. Hence, in certain instances it is evidenced that these two approaches induction and deduction are combined together to form grounded theory approach (Heit, 2007).

This study is focussed on accounting and financial reporting recognition of human capital, which is explained via number of accounting theories. Some researchers have adopted induction to derive accounting for human capital investment (Elias, 1972) while most of the others have captured the practice via financial reporting

recognition using general accounting theories (Abeysekera, 2008; Abeysekera and Guthrie, 2004; Ax and Marton, 2008). However, since there is hardly any theory explaining either firms investment in human capital or accounting and financial reporting recognition of investment in human capital, the issues essentially is investigated primarily via studying quantitative and qualitative data relating to the investment in human capital with the objective of understanding the situation and highlighting the possible theoretical solutions. Though not completely, some characteristics of inductive research approach has been evidenced in this study. However, following the methodological evidence of studies on accounting and financial reporting recognition of intellectual capital and human capital investment, and other voluntary financial reporting practices, (Abdolmohammadi, 2005; Lajili and Zeghal, 2006; Barako et al., 2006; Abeysekera, 2008; Abeysekera and Guthrie, 2004) deduction is adopted as the key research approach in this study. Taking a combined approach, study utilises both induction and deduction though not at equal level. Induction part of the study, is used in exploring the practice human capital expenditure and disclosure in the absence of specific theories, and is rather dominated by the deduction addressed via explanatory approach in determining the motives behind and the consequences of human capital investment. The inductive part of the research facilitates an in-depth exploration of the quantitative and qualitative human capital data disclosed in the annual reports reflecting the value creation by the employees. Using empirically grounded combined approach to generate better results especially in social science researches (Glaser and Strauss, 1967) help triangulate findings while increasing the validity and generalizability (Saunders et al., 2007).

4.5 RESEARCH DESIGN

According to the research methodology onion by Saunders et al. (2007), research design primarily consists with research strategy, which in social science related studies could take the forms of either experimental, survey, case study, action research, grounded theory, ethnography and archival research or a combination of several of them depending on the research philosophy and approach. In addition, research design focuses on research choice explaining whether it takes the form of mono, multi or mixed methods and the time horizon considered cross sectional or time series. The choice of each of the aspects depends further on research objectives and the stage of the study as well. Use of multi-method is proven advantageous in improving the validity, reliability and the generalisability of the results. As research design is the general plan of answering the research questions formulated based on the research objectives (Saunders et al., 2007), research it's illustrated with reference to each of the research questions.

The first research objective of "understand the current practice, investment in human capital by listed firms as its reflected via accounting and financial reporting recognition of this investment conceptualised via human resource expenditure, human capital per value added coefficient and voluntary disclosure of human capital information in firms' annual reports", is addressed using the research strategies belonging to the exploratory and descriptive. They employ the strategy of archival research, utilising the content analysis of the annual reports since annual reports are the mostly used, widely distributed, and reliable document issued to the external stakeholders of the firm (Campbell, 2000) reflecting the accounting and financial

implications relevant to investment in human capital of the firms. Many previous researchers in addressing intellectual capital investment and human capital investment related studies have adopted the same strategy as well (Abdolmohammadi, 2005; Barako et al., 2006; Williams, 2001; Abeysekera, 2008 & 2010; Abeysekera and Guthrie, 2004).

The same archival research strategy, used by previous researchers (Abeysekera, 2010; Williams, 2001; Abdolmohammadi, 2005) has been adopted in addressing the research objective of "understanding the determinants of and the expected consequences of accounting and financial reporting recognition of human capital investment conceptualised via human resource expenditure, human capital per value added coefficient and voluntary disclosure of human capital information in firms' annual reports" as well. However, due to the examination of the causal relationship between determinants and consequence of accounting and financial reporting recognition of investment in human capital, the research strategy has been more explanatory in nature. In addressing both the above objectives, the periodical change in the practice as well has been captured by extending the research to panel data setting covering both cross-sectional and longitudinal aspects. Considering the highly time consuming nature involved with archival research strategy and the research approach, however, the study has been limited to five accounting years with panel data analysis (Chen et al., 2005; Mahoney and Roberts, 2007; Barako et al., 2006).

In summation, the research utilises multiple methods, combining both quantitative and qualitative data gathers through the annual reports in addressing different aspects

since they very rarely exist in isolation. The data collection process itself uses mixed method techniques of using quantitative data from secondary sources and synthesizing qualitative data gathered from secondary sources to interpret the significance and to quantify for further statistical analysis. This in a way makes the study capable enough in reflecting a holistic picture of accounting and financial reporting recognition of firms' human capital investment. This is further facilitated via cross section and time series coverage proposing panel data analysis in the study.

4.6 RESEARCH SAMPLE

Considering the research evidence on investment in human capital and accounting and financial reporting recognition of this investment, many theoretical and conceptual studies are found covering developed countries (Becker, 1962 & 1964; Bassi and McMurrer, 2005; Ax and Marton, 2008) and comparatively little or no theories proposed by developing countries. Most of the studies conducted in developed countries have reflected implications on investment in human capital on the span of, valuation of human capital, theoretical development, policy enhancement or formation and development of regulatory framework (Becker, 1962; Bassi and McMurrer, 2005). On the other hand, large number of empirical evidence on accounting and financial reporting recognition of intellectual capital and human capital investment are reported from developing countries compared to developed countries (Abeysekera, 2008; Abeysekera and Guthrie, 2004; Hossain et al., 2004). Some of the empirical studies reported are on individual country, while limited amount of evidence are found on comparisons conducted within categories

(Subbarao and Zeghal, 1997) such as European countries, lower developed countries etc. or on comparisons between countries from different categories: developed and developing (Abeysekera and Guthrie, 2004). One general conclusion derived through these studies is that, investment in human capital has been vital irrespective of whether the country is developed or developing (Bassi and McMurrer, 2005). However, given the number of theoretical and conceptual studies proposed by developed countries, it is imperative to analyse empirically the current status of firms involvement in the practices of investment in human capital and accounting and financial reporting recognition of this investment. Therefore, this study involves, empirical investigation of the current practices human capital investment and accounting and financial reporting recognition of this investment, aiming to propose theoretical and methodological enhancements using data from developed countries.

Given the fact that there actually have been some genuine efforts to formalise the practice human capital accounting and to develop policies to enhance the current inadequacies and anomalies in the practice (DTI, 2003a and 2003b, which are even termed as Kingsmill reports), even though the success of which was questionable due to the influence of UK accountancy profession in effectively emasculating those initiatives (Roslender and Stevenson, 2009), firms listed in London stock exchange, UK has been chosen as the research population. The criteria of choosing the larger firms, especially firms with the highest market capitalisation, has been the criteria for many previous studies on voluntary accounting or financial reporting practices in general and accounting and financial reporting recognition of human capital and intellectual capital investment in particular (Abeysekera, 2008 and 2010; Abeysekera and Guthrie, 2004 and 2005; Abdolmohammadi, 2005; Ax and Marton, 2008; Ness

and Mirza, 1991; Subbarrao and Zeghal, 1997). This not only helps in reducing the chance for size effect but also minimises the impact of having many outliers in the study. Therefore, firms listed in FTSE 100 listing of London Stock exchange is selected as the sampling population.

According to Roslender and Stevenson (2009), the accounting for people initiatives has originally been announced in UK in 2003. Allowing time for the message to be convinced to the industrial community and voluntarily adopt them, particularly the public listed firms, for them to start disclosing at least minimal level under financial reporting practice if they so desire, data are collected from annual reports starting from the year ended 2005. Moreover, annual reports for firms listed in FTSE 100 from the year ending 2005, is considered for data collection to minimise the impact of using two regulatory frameworks GAAP and IFRS as well, since UK and European Union decided to improvise mandatory IFRS since 2005 (Christensen et al., 2007; Ernst and Young, 2012). Similarly sample duration covers the period before the introduction of UK corporate governance code (FRC, 2010), since it has had certain impact on financial reporting practice especially on employees as they one of the major stakeholder categories of firms, though the applicability of code itself has not been compulsory.

Thus, all the firms listed in the FTSE 100 listing from the years ending 2005 to 2009, subject to data availability, were considered as the research sample in achieving the first two research objectives relating to investment in and accounting and financial reporting recognition of investment in human capital. Since disclosure of human resources expenditure have not been mandatory under US GAAP and IFRS (Ernst

and Young, 2012), most of the annual reports of international firms listed in LSE did not disclose human resources expenditure and had to be eliminated from the sample as it is one of the key parameters in research model. As a result, the total research sample was limited to only 210 annual report observations over 5 year time period (2005-35, 2006-40, 2007- 40, 2008-46 and 2009-49). Firm choice in sample selection was not limited or eliminated based on the industry (Goh and Lim, 2004; Abeysekera, 2008 and 2010; Abeysekera and Guthrie, 2004 and 2005), as it was the case in many of the previous studies such as Sharabati et al. (2010), Sihotang and Winata (2008) etc..

4.7 DATA COLLECTION

Different types of data collection techniques aiming exploratory and explanatory approaches are employed in this study depending on the research objectives and the research strategies designed to achieve these objectives. Therefore, the study adopted is claimed to be an empirically grounded methodology though not completely belong to ground theory approach. Hence, data collection involved techniques: primary data collection via content analysis of archival source i.e. company annual reports produced over a period of time and secondary data collected from external databases.

Addressing the research objectives, data are collected from the sample of annual reports chosen from FTSE 100 listing of London Stock exchange covering five year time period starting from the year ended 2005-2009. Adopting from the previous empirical studies annual reports are chosen as the source document for the data

collection. Given the fact that annual reports are the "key communication vehicles between a firms management and its stakeholders" (Michalisin, 2001, p. 152) and since it is the most reliable and the very popular document to find quantitative and qualitative information disclosed by the firms targeting the external stakeholders including shareholders, potential shareholders, creditors, banking and financial institutions etc., many researchers have chosen annual report as the externally available source to study about the investment in intellectual capital (Abdolmohammadi, 2005; Abeysekara, 2010; Williams, 2001) and the human capital (Abeysekera, 2008 & 2006; Ax and Marton, 2008; Abeysekera and Guthrie, 2004) and even many other aspects such as firm performances, corporate social responsibility, environmental concern of the firms etc. (Barako et al., 2006; Holland and Foo, 2003; Ness and Mirza, 1991; Rizk et al., 2008). Content analysis of annual reports to discover voluntary information disclosed addressing a variety of aspects of the firm has proven the validity of assertion of annual reports for empirical investigations on information disclosure (Michalisin, 2001) thus, the same is adopted in this study too. Since there are no any regulatory mechanisms or standard framework governing the practice accounting and financial reporting recognition of human capital investment as well as, the practice is identified more as voluntary. Therefore, only the voluntary disclosure sections of the annual reports are considered in data collection (Kang and Gray, 2011). Confirming the choice of the method, researchers have identified, an in-depth study of annual reports of public listed firms for financial statements and qualitative information disclosed, as a very successful method of analysing firm operations and performance both from pedagogical as well as from the applied standpoint (Booker and Harris, 1980). Therefore, following the archival research strategy, content analysis is adopted as the primary data collection

technique to collect information on firm specific characteristics, corporate governance characteristics, variables reflecting the accounting and financial reporting recognition of human capital investment, and performance outcome. In addition, external secondary data source, FAME as well is used for data collection on financial parameters.

According to Krippendorff (1980), content analysis is understood as an "empirically grounded method" (p. xvii), which also is "exploratory in process" (p. xvii), while the "contemporary content analysis has been forced to develop a methodology of its' own" (p. xx). Due to the fact that content analysis technique of data collection is specially utilised in the instances where, qualitative information is needed to collect in to categories and derived as a quantitative figure to reflect the qualitatively explained phenomenon (Krippendorff, 1980), it has compensated the inadequacy of a measurement or a quantitative parameter to capture such phenomenon as well. As an example, in the absence of a proper measurement to capture the accounting and financial reporting recognition of firms investment in human capital a human capital disclosure index is derived using the voluntary disclose, which could be used as a proxy parameter (Ax and Marton, 2008; Chen and Lin 2004; Royal and O'Donnell, 2008). Previous researchers have defined content analysis based on the notions either content is inherent to the text or content is a property of the source of text. Many researchers have adopted this notion of content analysis technique in which case the disclosure of information is captured simply as disclosure or non-disclosure (Williams, 2001; Rizk et al., 2008; Barako et al., 2006) or frequency of reporting (Abeysekera and Guthrie, 2004) in deferent means such as number of words (Entwistle, 1999; Wilmshurst and Frost, 2000; Lajili and Zeghal, 2005), number of

sentences etc. (Holland and Foo, 2003; Lajili and Zeghal, 2005; Boesso and Kumar 2009).

In explaining content analysis in his book Krippendorff (1980) has relied on the notion that content is emerging in the process of the researcher analysing a text relative to a particular context. Therefore, Krippendorff (1980) stated content analysis, as a research technique of making replicable and valid inferences from the data according to their context. Adhering to the same basis of notion, disclosure on human capital investment of the entity as well is considered in the context of human capital investment. Therefore, in the data collection process in order to analyse human capital disclosure in the context of human capital investment, disclosure index is developed in a way that it reflect firm value creation via investment in employees. As a result, human capital disclosure framework is defined in a way it reflects, how human capital management and development provides a competitive advantage for the firm via firm value creation. Applying the Krippendorff's (1980) argument, content in context, becomes possible, in assuming the existence of the two dimensions, disclosure carry a meaning facilitating the categorisation as well as meaningfulness of disclosure based on the extent or level of disclosure is measurable. Booker and Harris, (1980) elaborated that it will be rather beneficial if, the content analysis of annual report of a firm is expanded to consider the perception of the financial statement users as well as studying the reporting practice of more than one firm which might be an opportunity for future studies.

4.8 RESEARCH MODEL

The research model is presented with reference to the theories and the conceptual frameworks (figure 3.04 and 3.06) illustrated in the previous chapter by expanding them further to reflect the variables involved in the model by cascading down the key concepts to measurable variables. This facilitates the analysis of variance in investment in human capital via two separate models to examine the determinants and the consequences of financial reporting recognition of firms' investment in human capital. Using the concepts illustrated, model instruments are defined and based on the model instruments and the variables, the research hypotheses are developed, which then is followed by a descriptive and inferential statistical analysis.

4.8.1 Model instruments

Human capital of the firm is operationalised in previous studies in different means including; the payroll cost (Lev and Schwartz, 1971; Brummet et al., 1968; Flamholtz, 1972a & b; Edvinsson, 1997; Sveiby, 1997) and the human capital efficiency as value added human capital efficiency measure (Pulic, 1998 and 2000) etc.. Even though researchers have used the payroll cost as a proxy to measure the investment in human capital of the firm (Lev and Schwartz, 1971; Edvinsson, 1997; Sveiby, 1997), none of them in fact have used the same proxy to understand value relevance of and/or the determinants of the practice human capital investment. Moreover, though there are many surrogate measures to reflect the investment in human capital including acquisition cost (Brummet et al., 1968), replacement cost

(Flamholtz, 1973), discounted wage flows (Lev and Schwartz, 1971), market value, discounted earnings etc., none of them have penetrated the practical world as a part of accounting or external financial reporting making them usable particularly for the external stakeholders of firms. As a result, instead using these measures, many researchers have used human capital disclosure indices as proxies for investment in human capital (Ax and Marton, 2008; Abeysekera, 2008; Abeysekera and Guthrie, 2004) and even overall intellectual capital investment (Abdolmohammadi, 2005; Bukh et al., 2005). The legitimacy theory as well, in certain instances has been explicit about the use of qualitative disclosure in order to reflect the investment in hardly measurable assets such as investment in intangibles and even social capital investments of the firms (Holland, and Foo, 2003). However, to what extent a random collection of human capital or intellectual capital attributes used in the disclosure index measured considering the presence or absence of the information, the number of occurrence of information or the size of information disclosed actually recognise the investment in human capital or intellectual capital is questionable. On the other hand, the fact that standalone financial information becomes irrelevant for investors for some fast growing industries, implies that financial information better be combined with disclosure of additional qualitative and quantitative information as well. Therefore, in this study, remedying the problems mentioned above, investment in human capital conceptualised by way of human capital expenditure and human capital disclosure index reflecting the value creation via investing in people are used as key model instruments.

In determining the value of disclosure index, quantitative, qualitative and pictorial, human capital attributes considered in previous studies are gathered and pooled in to

the balanced scorecard categories in a way that employee involvement in firm value creation is reflected (figure 3.05 and table 3.01 and 3.02). Hence, traditionally adopted disclosure index model has been extended with the use of categories and performance levels of the balanced scorecard (Kaplan and Norton, 1992) for the purpose of ascertaining the level of reporting under human capital disclosure items identified. The key difference between this study and almost all the previous studies is that, rather than just relying on the disclosure vs. non disclosure, or frequency count as words, lines, sentences, paragraphs or the pages (Abdolmohammadi, 2005; Abeysekara, 2007; Abeysekara & Guthrie, 2004; Abeysekara & Guthrie, 2005; Murthy and Abeysekara, 2007), under each of the attributes or value creation factors as referred in this study, meaning of disclosure category and the meaningfulness of what is disclosed on how investment in human capital contributes in firm value creation is captured in calculation of the disclosure index value to reflect as a proxy for accounting and financial reporting recognition of investment in human capital. Therefore, this proxy figure reflects the Krippendorf (1980) argument of content analysis, content in context, in deriving the human capital disclosure index. Hence, the balanced scorecard framework, as is justified in theorising and conceptualising section as well, is used as the foundation in calculating the disclosure index with data collected (Figure 4.04).

According to the illustration in figure 4.04, in data collection via content analysis, disclosure (1) or non-disclosure (0) of each of the human capital value creation factors (table 3.01 categorised under four perspectives of the balances scorecard) under each level of reporting is reported, considering the availability of information at each level as well. In this case, if a certain firm reports on all the human capital

attributes covering all the levels of reporting as well, the total of the score for that firm becomes 115. Therefore, the score earned by each firm, as a ratio of the ideal situation of full reporting (115) is calculated as the human capital disclosure index value and it's illustrated in the equation (1) below.

Figure 4.04: The two-dimensional frame-work on Human capital disclosure index

							Total
Value creation factors (i)	Financial perspective -Item (a) 1-3	X_{111} {1,0} X_{121} {1,0} X_{131} {1,0}	X_{112}{1,0} X_{122}{1,0} X_{132}{1,0}	X_{113}{1,0} X_{123}{1,0} X_{133}{1,0}	X_{114}{1,0} X_{124}{1,0} X_{134}{1,0}	X_{115}{1,0} X_{125}{1,0} X_{135}{1,0}	X_{i1j} X_{i2j} X_{i3j} $\sum$ X_{1aj}
	Customer perspective -Item (b) 1-5	X_{211} {1,0} X_{221} {1,0} X_{231} {1,0} X_{241} {1,0} X_{251} {1,0}	X_{212} {1,0} X_{222} {1,0} X_{232} {1,0} X_{242} {1,0} X_{252} {1,0}	..	..	..	X_{2bj}
	Internal business process perspective -Item (c) 1-8	..	..	..	..	..	X_{3cj}
	Learning and growth perspective -Item (d) 1-7	X_{411} {1,0} .. .. X_{471} {1,0}	X_{412} {1,0} .. .. X_{472} {1,0}	.. .. ..	.. .. ..	X_{415} {1,0} X_{475} {1,0}	X_{4dj}
		Objective*	Measurement*	Targets*	Initiatives*	Achievements	
	Level of disclosure (j)						X_{ij}

(* Adopted from the balanced scorecard framework
i- number of perspectives; i=1-4
- a- number of value creation factor under financial perspective; a=1-3
- b- value creation factor under financial perspective; b=1-5
- c- value creation factor under internal perspective; c=1-8
- d- value creation factor under leaning & growth perspective; d=1-7

j- number of levels of reporting; k-1-5)
X_{iaj}, X_{ibj}, X_{icj}, X_{idj}, - categorical human capital disclosure total under each perspective
X_{ij} – grand human capital disclosure total for the firm)

$$Human\ capital\ disclosure\ index\ (\mathrm{HCD}_t) = \frac{X_{ij}}{115} \quad (1)$$

In addition to the overall human capital disclosure index, categorical human capital disclosure index as well is developed (equation (2) – equation (5) given below) reflecting the four balanced scorecard perspectives as follows for descriptive interpretation. The financial reporting recognition of human capital investment as the overall human capital disclosure is comparatively interpreted with the results for the disclosure indices developed under the four balanced scorecard perspectives.

$$Disclosure\ index: financial\ perspective\ (\mathrm{HCDF}_t) = \frac{X_{1aj}}{15} \quad (2)$$

$$Disclosure\ index: customer\ perspective\ (\mathrm{HCDC}_t) = \frac{X_{2bj}}{25} \quad (3)$$

$$Disclosure\ index: internal\ business\ process\ perspective\ (\mathrm{HCDIB}_t) = \frac{X_{3cj}}{40} \quad (4)$$

$$Disclosure\ index: learning\ and\ growth\ perspective\ (\mathrm{HCDLG}_t) = \frac{X_{4dj}}{35} \quad (5)$$

Once the key model instruments and the variables measuring the firms' investment in human capital are developed, the variability in firms' investment in human capital is investigated in both directions: forward and backward covering a holistic picture (a 360^0 evaluation) on the subject matter, accounting and financial reporting recognition of investment in human capital of firms. In backward direction, as the determinants of human capital investment, firm specific and corporate governance related factors are identified. Whereas, in forward direction, how investment in

human capital is influencing on the consequences from different stakeholder point of view is discussed. Considering both these directions the research hypotheses are developed and they are illustrated in the subsequent section.

4.8.2 Hypotheses development

Even though, maximising shareholder wealth is the main objective of firms, stakeholder theory (Freeman, 1984) proposed that, the corporations must consider the needs and demands of the stakeholders and not just stockholders. This concept has become a part of the strategic management process as well (Clement, 2005) since, the traditional human resource management concept of, cost control has been mostly overwritten by the modern value creation perspective under strategic human resource management, which looks after all the stakeholders of the firms' instead one category. Firm value creation is explained by linking people, strategy and performances proposing that employees are no longer just an expense for the firms, rather a valuable investment (Becker et al., 2001). However, the recognition of the value of employees as an investment in human capital, have been different from one firm to the other depending on many factors and the same has been the explanation for varying performance aspects of the firms too.

Due to the tendency of firms in recognising the money spent on employees as an investment despite the controversial accounting treatment, firms have started to compensate the effect of it via qualitatively disclosed information in annual reports (Abeysekera, 2008; Abeysekera and Guthrie, 2004; Ax and Marton, 2008), in a way

that reflects the value creation by employees. Hence, the proxies human capital expenditure, human capital per value added coefficient and the human capital disclosure, recognising the accounting and financial reporting recognition of human capital investment, are worth studying further to understand firms' behaviour and the expectations of investing in human capital. In essence, the critical labour input for firms when perceived as the value creator of firms, theoretically is to be facilitated to achieve strategic competitive advantage for firm rather than minimising to achieve short-term profit targets.

Considering previous empirical evidence, human capital expenditure has hardly ever been used as a proxy for investment in human capital to study about the determinants and consequences; however, many researchers have studied the human resources disclosure of the firm in the same matter. In this study both human capital expenditure and the human capital disclosure are used as a proxies to reflect investment in human capital, while some researchers have attempted to justify this by revealing the association between the company management practice and perceived importance of disclosing human resources information Ax and Marton (2008). Moreover, the same method of understanding the firm involvement and investment in different practices such as corporate social responsibility, research and development etc., via voluntary information disclosure has been used in previous studies as well (Roberts, 1992; Chan et al., 1990; Chan et al., 2001). Given the fact that both human capital expenditure and disclosure are reflecting the investment in employees, human resources disclosure, when interpreted as investment expected to behave as it's a capital for the firms and hence the hypotheses are developed relying on empirical evidence relating to human capital expenditure and disclosure,

intellectual capital development expenditure and disclosure and even other firm practices reflecting investments though not accounted for as yet.

Determinants of investment in human capital

The use of, human capital expenditure, which is financial implication of the human resource management practice, human capital disclosure and the financial reporting out come of human resource management practice of the firms, is not entirely new in conceptualising the investment in human capital of firms (Chen and Lin, 2004; Ax and Marton, 2008; Abeysekera, 2008; Abeysekera and Guthrie, 2004). Evidently, there has always been a huge variance in the human capital expenditure and the human capital disclosure across firms, industry and different markets (Vithana and Gunaratne, 2009; Bassi and McMurrer, 2005) as well. The variance observed has been attributable to, how spending on employees is perceived by the managers as well as how different stakeholders have responded to the investment in human capital by firms.

Moreover, the obvious shift in perspectives from cost control to value creation by the employees, have been positively stimulated via other interventions such as discussions on (DTI, 2003a and b) and introduction of corporate governance to shape the organisational function (FRC, 2010) Corporate governance has ensured the interest of the stakeholders opposed to the traditional shareholder interest and have particularly treated employees as a category of the stakeholders of the firms. Hence, the investment in employees has certainly been attributable to the corporate

governance mechanism of the firm in addition to the firm specific characteristics. Moreover, with the expanded category of stakeholders, investment in human capital has had different consequences from each category point of view. In this background, investment in human capital, as its reflected through accounting and financial reporting recognition of firms investment in human capital, using the proxies: human capital expenditure and human capital disclosure in annual reports, are analysed to understand how firm specific characteristics and corporate governance mechanism of firm determines the firms' investment in human capital.

Firm size

Firm size in general has been understood as a determinant of investment and this argument has been supported further via some inherent advantages of being a larger firm such as having better access to external capital market, less susceptibility to information asymmetry, easy access to current information, lower transaction cost less agency conflicts due to the presence of institutional investors (Kadapakkam et al., 1998). As a result, firm size has been used as a determinant of firms' investment in other intangible investments and reflection of them via disclosure or even disclosure in general (Soumaya, 2012; Barako et al., 2006; Wang et al., 2008; Abdolmohammadi, 2005; Kang and Gray, 2011; Chan, 2009a and b; Vithana and Gunaratne, 2009; Holland and Foo, 2003). Firm size measured in different ways is said to have an impact on the voluntary information disclosure (Barako et al., 2006; Vithana and Gunaratne, 2009; Abdolmohammadi, 2005). The size is collected as market capitalisation of firms in this study. However, in order to avoid the impact of

extreme fluctuation, as was the case in many of the previous studies, the natural log of the total market capitalisation is treated as the measurement in the statistical analysis (Chan, 2009a). Relying on the theoretical foundation and the empirical evidence in favour of the positive association between firm size and the investment (Saumaya, 2012), the same relationship is hypothesised between the firm size and the investment in human capital as well as follows.

H1.1: There is a significant positive association between firm size and the investment in human capital, conceptualised via accounting and financial reporting recognition of human capital investment.

Industry type: intellectual capital intensity

Shifting economies from "manufacturing powerhouses to service driven economy has placed a great emphasis on human resources planning" (Zula and Chermack, 2007), investment and ultimately on accounting and financial reporting recognition of human capital investment as well based on the corporations need to legitimise their activities (Lindblom, 1994; Campbell, 2000). In considering industry type as a determinant of investment in human capital, reflected via accounting and financial reporting recognition of this investment measured using the proxies: human capital expenditure and human capital disclosure, industry type has proven to be a determinant of information disclosure in the absence of a proper framework governing accounting for different types of intangible investments such as intellectual capital (Wyatt, 2005) research and development and even human capital

in particular (Lepak and Snell, 2002; Vithana and Gunaratne, 2009). In general, industry type is even identified as a significant determinant on financial reporting outcomes, such as voluntary disclosure (Ness and Mizra, 1991; Entwistle, 1999). Paying attention to the human capital disclosure, Vithana and Gunaratne, (2009) classifying industries in to two main categories as service sector and the non service related firms, revealed that the service sector firms disclose more information than the non service sector firms. Moreover, researchers have discovered that firms belonging to intangible intensive industries invest more on intangible assed development (Amir and Lev, 1996) and this has been a consideration in sample selection in intellectual capital disclosure studies to avoid the huge variance as well (Li et al., 2008 & 2012; Sonnier et al., 2007). Therefore, in order to capture the variability related to high or low intellectual companies with no discrimination in sample selection a dummy variable is introduced to reflect the firms with high intellectual capital (1) or otherwise (0). According to the Li et al., 2008 & 2012 sample selection and the high or low intellectual nature, firms belonging to pharmaceutical and bio technology, IT, telecommunication, business services, media and publishing, bank and insurance, food production and beverage and aerospace and defence were categorised as high intellectual capital firms while the rest is treated as law infrastructure firms and the research hypotheses are developed.

H1.2: High intellectual capital firms account for significantly higher investment in human capital as conceptualised via accounting and financial reporting recognition of human capital investment.

Industry type: regulation

In addition to the industry classification discussed above, some researchers have purposefully excluded banks and financial companies, insurance investment and financial services, property and investment companies and trusts, from their samples (Cooke, 1989; Iatridis 2008; Raffournier, 1995) as well due to highly regulated nature in accounting and financial reporting practice. Therefore, in order to capture the variance in accounting and financial reporting recognition of human capital investment, due to highly regulated nature of the practice, in this study firms listed under FTSE 100 are classified in to two categories as firms belonging to Banking and Financial industry (regulated industry sector) and firms belonging to non banking and financial industry (firms not belonging to a highly regulated industry) or via the introduction of a dummy variable, the relationship it has with human capital investment is hypothesised as follows.

H1.3: Firms from banking and finance industry account for significantly higher investment in human capital compared to the firms form non banking and finance industry, as conceptualised via accounting and financial reporting recognition of human capital investment.

Leverage

Firm leverage is considered as a proxy variable to measure the capital structure of the firm and the significance of firm leverage in investment in human capital

reflected via accounting and financial recognition of investment in human capital is explained using two theories: resource dependency and agency. According to the resource-based view, internal resources and capabilities provide a source for competitive advantage, thus in general development of internal capabilities becomes more important than, limited internal financial resources (Maranto-Vargas and Rangel, 2007). Since capital structure doesn't have an impact on the firm value based on the Modigliani and Miller (1958) arguments, firms may extend the investment in human capital using external finance, which may result even in interest tax shield benefit as well. According to the current accounting treatment, since human capital is still treated as expenditure (tax deductible) it provides an advantage via tax savings as well in addition to the strategic competitive advantage. In such a scenario, firms may invest more on human capital of the firm to gain a strategic competitive advantage, even when there are constraints in terms of the internal financial availability. However, according to Long and Malitz (1985), opposed to the investment in tangible assets, due to the higher risk involved in the firm specific intangible investments, firms investing more on them can support only a lower debt than those investing in tangible investments. Hence, though there is a relationship between the firm leverage and the investment in human capital of the firm, sometimes the direction of the relationship can hardly be predicted since results have generated more of a mixed result (Soumaya, 2012). Research evidence revealed that the capital structure is said to have a clear link with the firms' investment as well as accounting and financial recognition of investment in different practices. This specially becomes the situation where internal funds are limited or financial institutions are the primary source for the company funds (Barako et al., 2006). According to Popov (2013), lower investment in elements of human capital such as

training and development has been attributable to firms' lack of access to finance in general as well as to bank credit in particular. This implies that the lower the leverage firm can afford to, the lower the investment in human capital it resulted in.

On the other hand, the accounting and financial reporting recognition of investment in human capital and even other intellectual capital investment related studies provided supportive evidence to the existence of a positive relationship between the leverage and investment in human capital as well as the accounting recognition for this investment via voluntary disclosure (Barako et al., 2006; Iatridis, 2008; Wyatt, 2005). According to the agency cost theory, firms having high portion of debt tend to disclose more on voluntary information in order to reduce the agency cost. Thus even the disclosure seems to be higher for the firms with approximately more debts due to the increasing potential for wealth transfer from debt to share holders to the managers. Empirical evidence are not found to be constant with this regard as significant positive (Barako et al., 2006), as some researchers have expected and even observed negative relationships for leverage as a determinant of voluntary social and human capital disclosure (Cormier et al., 2009). At the same time some researchers ended up concluding, as there is no relationship between the firm leverage and the voluntary information disclosure on in some emerging market conditions. Deviation of the findings might have been a result of different ways of conceptualisation since there were no any consistency in the approach of conceptualising the variable leverage, as an example, leverage is conceptualised in different ways as the ratio of total debt to owners equity (Wang et al., 2008), the debt ratio defined as the total debt to total assets (Barako et al., 2006; Chan, 2009a) etc. Considering the theoretical framework in agency cost, in this research, the

conceptualisation based on total debt to total equity is adopted. Considering the previous literature there are still controversial points. Even though the voluntary human capital disclosure shows a significant positive relationship with leverage of the firm the direction of the relationship for the human resource expenditure might vary depending on many other reasons such as reduction of profit due to the low profit as a result of high human resources expenditure reported, misunderstandings related to the conflicting interest due to the distribution of a big portion of value added of the firms to the employees etc. resulting controversial findings compared to previous. However, the theoretical argument of highly levered firms can exploit the investment opportunities and invest more on the human capital to gain competitive advantage via the enhanced resource base and the fact that accounting recognition of value creation via adequate financial reporting to reduce information asymmetry and the agency cost, provide a background for a positively hypothesised relationship between leverage and the investment in human capital of firms.

H1.4: There is a significant positive relationship between leverage of the firm with the investment in human capital, conceptualised via accounting and financial reporting recognition of human capital investment.

Profitability of the firm (ROE)

Since early 1960s investment in education at household level and even state level is identified as an investment in human capital of the firm (Schultz, 1961 and Becker, 1962), which provides a long-term benefit. As a consequence, even in the firm level,

employees are compensated based on the human capital they've developed in them over the period as knowledge, skills and attitudes and firms spend even more to develop this human capital further to make employees more suitable for the role they play in the firms, which again is a part of investment in human capital. Covering both these aspects, the total human resource expenditure is conceptualised as a valid proxy to represent firms' investment in human capital. However, since this is deducted as expenditure based on the current accounting treatment, firms may end up in a lower accounting profit in short run. Considering the long-term sustainability of the firm however, employees actually are the most important assets capitalised by the firm and firms will have to opt for either short run profit or long run sustainability plus the competitive advantage. On this background, even though profitability and the investment in human capital contradicts each other based on the financial accounting outcome, in focussing on the long term sustainability and the competitive advantage, firms need to choose more investment on human capital of the firms. On the other hand, the short-termism and the managerial opportunisms hypothesis as well lead firms to invest less on important aspects such as human capital seeking for immediate financial gains (Wilkes et al., 1996; Mahoney and Roberts, 2007).

However, the typical financial goals of the firm being based on the profitability, it is obvious that many operational and financial aspects of the firms highly rely on the profitability of the firm. Return on equity investors as a primary goal common to all the corporate managers have been adopted by some researchers in studying the determinants of some firm practices such as intellectual capital investment and corporate social responsibility activities (Roberts, 1992). This has confirmed the

previous argument that, companies are more likely to spend and disclose more on socially responsible reasons such as corporate social responsibility or social capital when they are having a financially favourable position (Mills and Gardner, 1984) which can even be explained via stakeholder management under stakeholder theory (An et al., 2011). With this regard, investing on some aspects of human capital such as equal employment opportunity and facilitation, employee involvement in community etc. become a partial investment under corporate social responsibility. The same applies to the investment in human capital of the firms as well. As a result, despite the current accounting treatment, in considering human resources expenditure as an investment, even though the profitability has not been tested as a determinant of human capital investment, the accounting and financial reporting recognition of human capital investment and even other intellectual capital investment have been tested in a varying organisational setting (Kang and Gary, 2011; Vithana and Gunaratne, 2009). Hence, profitability has even been tested and proven significant by some of the authors as a determinant of the human capital disclosure (Vithana and Gunaratne, 2009) and even general information disclosure (Iatridis, 2008), while it has not been significant through some other studies in different context such as voluntary corporate disclosure (Barako et al., 2006).

The problem of reverse causality again arise leaving the doubt whether the profitable firms recognise more about investment in human capital of the firms or whether firms who recognise more about investment in human capital achieve more financial results via efficient utilisation of the asset (Chen et al., 2005). Therefore, the financial performance in terms of the efficiency in utilising the total asset, Return On Asset (ROA), was recognised as the impact of the investment in human capital,

while return on equity (ROE), which represents return to the shareholders of common stock, was identified as a potential determinant of the accounting and financial reporting recognition of investment in human capital. Some researchers have even proven this, indicating firms with profitable operations have incentive to invest and accumulate investment in intangible assets (Wyatt, 2005). Moreover, addressing investment in corporate social responsibility activities of the firm, which are basically aimed at different types of stakeholder categories including employees, Roberts (1992) as well concluded that firms with relatively strong economic position measured in terms of growth in return on equity are more likely to invest more on corporate social responsibility activities and accounting and financial reporting recognition of them as well. Therefore, the two proxies reflecting accounting and financial reporting recognition of human capital investment: human capital expenditure and voluntary disclosure are positively hypothesised with the firm profitability as adeterminants of the practice.

H1.5: There is a significant positive relationship between profitability and the investment in human capital, conceptualised via accounting and financial reporting recognition of human capital investment.

Liquidity

Cash flow of the firm has played an important role as a determinant of investment performance of the firms. The two variables: liquid asset, which is corresponding to the working capital (invested capital minus fixed asset) and the cash stock (cash plus

marketable securities) has been used by Soumaya (2012) as variables to proxy the liquidity as determinant of investment in this study and the results revealed a significant positive relationship of investment with the cash stock while the relationship with the liquid asset was significantly negative. The positive relationship has been confirmed even via some of the issues linked with the Modigliani and Miller (1958) cost of capital theories revealing that the even though the firm capital structure doesn't have impact on the firm value or profitability, there is a significant relationship between investment level and internally available funds since investments in financially constrained firms would be determined by their cash flows (Kadapakkam et al., 1998). Accordingly, despite Modigliani and Miller (1958) explanations, due to the comparatively higher risk involved in investment in human capital, and the lower agency cost involved, firms may find it easy to invest using internally available capital than external finance sources, thus highly liquid firms can easily invest in human capital. Paying attention to the accounting and financial reporting recognition of investment in intellectual capital and general financial reporting practice as well firms have ended up in mixed results (Barako et al., 2006).

Simultaneously, considering liquidity and the human resource expenditure, we tend to observe reverse causality too. As an example, due to the traditional accounting treatment of writing off of intellectual asset as expenses, firms end up being under valued resulting a big gap between the market value and the net book value of assets. This may result in adverse liquidity consequences for the firm. The consequence of that may have affected adversely on the subsequent human resource expenditure of the firm resulting under investment in education, training and development etc. (Abeysekera and Guthrie 2005). However, since firms are very much explicit about

their understanding about the importance of investing in human capital to improve the financial performance of the firm a positive relationship is hypothesised in between liquidity measured as current asset to current liabilities (Mills and Gardner, 1984; Barako et al, 2006) and investment in human capital measured in terms of the accounting and financial reporting recognition of human capital investment.

H1.6: There is a significant positive relationship between liquidity and the investment in human capital, conceptualised via accounting and financial reporting recognition of human capital investment.

Board size

Relying on agency and resource dependency theories, researchers have revealed that larger boards bring firms in more resources in terms of the knowledge, skills and experience, which can make use of the firms' other resources (Lev, 2001) and in aligning the interests of management and the employees (Jensen and Meckling, 1976). Therefore, a larger board while providing an optimum knowledge base for the top management structure induces firms in tangible and intangible investments aiming at the strategic competitive advantage for the firms. Hence, larger boards facilitates firms investment in human capital as well while communication their investment to the external stakeholders via proper financial recognition to these investments. Board size (the number of directors in the board) being one aspect under the corporate governance mechanism of the firms, have been tested in studying about the accounting recognition of the firm activities and provided mixed

results as a potential determinant of accounting recognition of many of the firm practices via voluntary disclosure of firms in different context such as positive significant relationship for human capital disclosure (Cormier et al., 2009) and no significant relationships with general information disclosure (Cheng and Courtenay, 2006). Abeysekera, (2010) through a study about the influence of board size on intellectual capital disclosure, conceptualised human resource expenditure on financial statements as tactical human capital and the human capital disclosure as the strategic human capital and concluded that firms recognising more strategic human capital has larger boards. This implies that how large board size helps firms to overcome skill deficiencies. However, the conceptualisation of the tactical and the strategic human capital based on the above justifications may have their own limitations as the portion of human resource expenditure should have been an investment based on the human capital theory, though the complete amount is written off as expenditure owing to the current accounting treatment. Relying on these factors, in this study firms' investment in human capital measured via human resource expenditure and the accounting recognition of human resource disclosed in the annual reports of the firm are positively hypothesised.

H1.7: Firms with larger boards invest significantly more in firms' human capital as conceptualised via accounting and financial reporting recognition of human capital investment.

Board composition

According to the agency theory (Jensen and Meckling, 1976), there is a tendency that the interests of managers and owners may diverge from each other's. In such a situation, the remuneration system provides a mechanism to align their interests together. In this principle agent situation, independent non-executive directors of the firms are expected to be playing the role of, minimising potential opportunism of managers and large controlling owners. Therefore, in the presence of more independent non-executive directors there will be more stringent monitoring of management, which is impartial for all the stakeholders. Even though it is not about investment in employees in general, board and in certain instances the committee independence has already been tested with the executive remuneration measured as amount compensation and the pay-performance sensitivity (Mendez, 2011). However, results did not reveal that the presence of independent directors would restrain executives' pay or increase of pay performance sensitivity (Mendez, 2011). While this include only two category of stakeholders claiming the value added of the firm, extending this to investment in human capital allow researchers to expand the stakeholders even to the employees of the firm in genital which becomes the primary objective of this study would be a valuable addition in this area of research.

Moreover, even thought the corporate governance mechanism itself is developed considering multiple stakeholder categories, firms' investment in human capital has rarely been the subject (Cormier et al., 2009) except for occasional studies on financial recognition of intellectual capital or corporate social responsibility in general (Abeysekara, 2010; Barako et al., 2006). The results revealed that many of

the corporate governance related variables including board composition measured via the portion of non-executive directors have had significant impact on the accounting and financial reporting recognition of operational aspects via voluntary disclosure of firms (Cheng and Courtenay, 2006; Barako et al., 2006; Cormier et al., 2009). Hence a similar conceptualisation has generated mixed results leading positive (Cheng and Courteney, 2006), negative (Barako et al., 2006; Eng and Mak, 2003) and neutral relationships between board composition or independence and firm practices. Cheng and Courtenay (2006) revealed that higher portion of independent directors in the board leads to higher level of voluntary disclosure implying that accounting and financial recognition of the firm operations are high when the board independence is high. The negative results may have been attributable to the conflicting interest in between directors, executives and employees of the firm, which could have been addressed via enhancement of the overall governance mechanism. Relying on the above theoretical and the empirical background, a positive hypothesis is developed between the board independence and the human capital investment conceptualised via accounting and financial reporting recognition which is measured in terms of human resource expenditure and disclosure. Given the fact that data in the study span from 2005-2009, covering the duration before the proposal for the UK corporate governance code (FRC, 2010), the same conceptualisation used by Barako et al., (2006) to measure the board independence via the composition of non executive to executive directors, the formula, total of non-executive directors to the total number of directors in the board is adopted in this study. Based on these variables the research hypotheses are developed as follows.

H1.8: There is a significant positive relationship between the board independence or the board composition measured as total non-executive to total number of directors and the firms' human capital investment conceptualised via accounting and financial reporting recognition of human capital investment.

Audit committee mechanism (size and number of meetings)

Even though the key to effective human capital management practice is measurement, and valuation, accounting and financial reporting recognition of it as well is identified as an equally important as that's how the intangible investment in human capital is properly communicated to make the practice visible to majority of the stakeholders (Roslender et al., 2004). Therefore, human capital management initiative taskforce as well has turned the attention towards the external reporting (DTI, 2003a & b). As a part of the corporate oversight mechanism, audit committees have always been responsible in evaluating the financial reporting quality of the firms in general (Rezaee, 2005; McDaniel et al., 2002) aiming at minimising the agency problem and exercising accountability to other stakeholders in general. Accounting and financial reporting recognition of investment in human capital as a part of the corporate governance mechanism and the same mechanism to oversight the practice by audit committees have been proposed even by the taskforce for human capital management (DTI 2003b). Accordingly, UK task force on human capital management have proposed audit committee or some other body responsible to the board to make sure that human capital management reports provide a balanced and an objective view (Roslender et al, 2004). Even though the presence of or the

functions of audit committee has net been tested so far as a determinant of human capital investment, it has widely been used as a determinant of financial reporting or the voluntary disclosure including intellectual capital and some aspects of human capital as well (Li et al., 2012; Barako et al., 2006; Cormier et al., 2009). Li et al., (2012) revealed that there is a positively significant relationship between size and the number of meetings of audit committee with the intellectual capital disclosure. Fulfilling the gap from human capital investment point of view as well size and the number of the audit committee meetings are positively hypothesised with the investment in human capital measured in terms of human resource expenditure and the accounting and financial reporting recognition of human capital investment.

H1.9: There is a significant positive relationship between, size of audit committee and the investment in human capital, conceptualised via accounting and financial reporting recognition of human capital investment.

H1.10: There is a significant positive relationship between the number of audit committee meetings and investment in human capital, conceptualised via accounting and financial reporting recognition of human capital investment.

Nomination and Remuneration committee

As an aspect of corporate governance mechanism, in addition to the audit committees, nomination and remuneration committees as well (Li et al., 2012; Barako et al., 2006; Cormier et al., 2009) were identifies as a part of mechanism to

govern the strategic and the operational aspects of listed firms. Since these two committees are equally valuable in terms of the supervisory roles they play in most of the human capital investment related decisions such as executive compensation packages, compensation decisions and appointments etc., playing a similar role, theoretical reasoning of nomination and remuneration committee involvement in accounting and financial reporting have evidently combined together (Mendez et al., 2011; Crespi-Cladera and Pascual-Fuster, 2013). Therefore, according to the agency theory, large committee size and better committee functioning via number of meetings facilitate firms' investment in human capital. According to the corporate governance code of 2010, it is also highly advisable to have remuneration and nomination committees of latest two non-executive directors (FRC, 2010). However, nomination and remuneration committee independence have not been a significant factor in determining the human capital investment related decisions (Crespi-Cladera and Pascual-Fuster, 2013). Since investment in human capital in the firms are closely associated with the functions and the responsibilities with the nomination and the remuneration committees, the size and the number of meetings conducted by the remuneration and the nomination committee as well are recognised as potential determinant of human capital investment of the firms and a positive relationship is hypothesised as follows.

H1.11: There is a significant positive relationship between size of the remuneration committee with the investment in human capital, conceptualised via accounting and financial reporting recognition of human capital investment.

H1.12: There is a significant positive relationship between number of meetings of the remuneration committee with the investment in human capital, conceptualised via accounting and financial reporting recognition of human capital investment.

H1.13: There is a significant positive relationship between size of the nomination committee with the investment in human capital, conceptualised via accounting and financial reporting recognition of human capital investment.

H1.14: There is a significant positive relationship between number of meetings of the nomination committee with the investment in human capital, conceptualised via accounting and financial reporting recognition of human capital investment.

Consequence of investment in human capital

According to the theoretically and empirically robust human capital theory (Cantillon, 1755 and Adam Smith, 1776, as cited by Dooley, 2005; Schultz, 1961; Becker, 1962; Backer, 1993), investment in human capital is recognised as individuals complementary capacity to generate added value and thus create wealth. Moreover, human capital theory confirms that investment in employees has a potential to increase their owners market and non-market productivity (Schultz, 1961). Many empirical investigations are conducted addressing how investment in human capital affects different types of market and non-market productivity parameters (Chen et al., 2005; Chan, 2009 a & b). Despite the conflicting conceptualisation of investment in human capital, researchers have investigated

about the stakeholder response for firms investment in human capital measured via human capital expenditure (Lajili and Zeghal, 2005; Dumay and Tull, 2007) as well the accounting and financial reporting recognition of human capital investment activities via voluntary disclosure measured using disclosure indices (Abeysekera, 2008; Ax and Marton, 2008).

Within this theoretical and empirical background, in this study, firms' investment in human capital measured directly, using the accounting figure, human resource expenditure and indirectly, using human resource expenditure measured as a coefficient, human capital per value added, combined with the financial reporting recognition of human capital investment via voluntary disclosure is hypothesised with the potential consequences of human capital investment as follows. Even though the total human resource expenditure by the firms does not completely reflect the amount invested in the human capital of the firm, given the limitations in categorising the capital and revenue types of human resource expenditure separately, the total human resource expenditure figure was chosen to conceptualise the human capital expenditure. Furthermore, the total human resource expenditure as a portion of value added relying on the value added intellectual capital coefficient technique (Pulic, 1998 and 2000) illustrated using equations in conceptualisation chapter was adopted to reflect the human capital investment in terms of the total value added distribution. Including the human capital disclosure, these three variables were hypothesised to determine the impact of that on consequences related to employee productivity, profitability and stock market return.

In investigating the consequence of different firm management and accounting practices on firm performances and stock market performances, number of control variables have been used since many firm practices and accounting and financial reporting performances of them depend on company specific characteristics including, firm size (Mangena and Tauringana, 2007; Kamath, 2008; Chan, 2009a and b; Mahoney and Roberts, 2007; Ehie and Olibe, 2010), industry type (Mahoney and Roberts, 2007), firm leverage or the capital structure (Mangena and Tauringana, 2007; Kamath, 2008; Chan, 2009 a and b; Mahoney and Roberts, 2007; Ehie and Olibe, 2010), firm profitability measured reflecting return on equity (Mangena and Tauringana, 2007; Kamath, 2008) and firm liquidity (Mangena and Tauringana, 2007), the same have been considered as control variables even in determining the consequences of investment in human capital of the firm. Relying on the previous empirical evidence on control variables and, the potential consequences of investment in human capital; employee productivity (Bronzini and Piselli, 2009; Chen et al., 2005), contemporaneous and lead profitability measures as return on total assets (Chan 2009 a and b; Chen et al., 2005) and contemporaneous and lead stock return (Lajili and Zeghal, 2005; Dumay and Tull, 2007; Chen et al, 2005), were tested statistically.

Employee productivity

Employee productivity measured in terms of pre tax profit of the firm divided by the number of employees has been tested as a determinant of intellectual capital investment by number of researchers (Chen et al, 2005). In many instances, a

positively significant relationship has been observed in between the investment in intellectual capital in which human capital is the main component and basically the value creator (Edvinsson and Malone, 1997). Moreover, previous empirical evidence support that many aspects related to human capital investment such as training and development, experience, has had positively significant impact on the employee productivity (Holzer, 1990). Relying on this empirical background, a positive relationship is hypothesised between the investment in human capital and the employee productivity as follows.

H 2.1: There is a significant positive relationship between investment in human capital and employee productivity.

Firm profitability

In different context researchers have revealed that investment in human capital have positive impact on firm financial performance measured in different aspects (Bontis et al., 2003; Riahi-Belkaoui, 2003). Some researchers have even extended their studies to reveal the relationship between different intellectual capital development aspects and the firm value including even the future financial performances of the firms (Bontis and Fitzenz, 2000). Due to the fact that firm resource utilisation, strategic and sustainable competitive advantage has knowledge base and human capital investment at their roots (Barney, 1991), in all these intellectual capital studies, human capital has always been a major component or literally the value creator of firm intellectual capital (Edvinsson and Malone, 1997). However, the

consequences of human capital investment from financial performance point of view, has rarely been studied while it has been a timely requirement due to the distinguished role of people in organisations and the whole economy.

Considering the financial performance researchers have utilised many variables including, return on asset, return on capital employed, earnings per share, growth in revenue etc. (Chen et al., 2005). However in this study, one of the widely used parameter i.e. return on total asset measured as pre tax profit divided by the average total asses (Chen et al., 2005: Chan, 2009 a and b) reflecting the firms efficiency and the impact of utilising the total asset, has been used to reflect the financial performance. Based on the above empirical background, the research hypothesis is developed as follows. Given the fact that investment in human capital generates benefits over more than one year, both contemporaneous (time t) and lead (time t+1) profitability indicators are hypothesised as a positively significant consequence of investment in human capital.

H 2.2a: There is a significant positive relationship between investment in human capital and contemporaneous profitability indicator (return on asset at year t)

H 2.2b: There is a significant positive relationship between investment in human capital and lead profitability (return on asset at year t+1)

Stock return of the firm

The consequences of investment in human capital can be estimated mainly from two points of views as consequences on firms' stock market performances reflecting the shareholders and debt holders. With this regard, the research evidences so far have discovered that many of the voluntary disclosure practices have had impact on different aspects of the firm performances including financial and accounting performances and the stock market performances (Collett and Hrasky, (2005). Moreover, some of the researchers have revealed human component of firms as the perfect value driver making the strategic success of the firm (Royal and O'Donnel, 2008; Boedker et al., 2004), implying that human capital investment recognised through the accounting and financial reporting recognition using the measures of human capital expenditure and human capital disclosure, influence the firms performances (Lajili and Zeghal, 2006 & 2005b). However, many of the evidences with this regard still reflect voluntary disclosure nature using qualitative analysis tools and have not proven through a sound statistical mechanism. The research gap in relation to this is identified as whether the stakeholders are correctly recognising investment in human capital by firms as a valuable piece of information for the firm. Relying on the simple assumption, firms who spend more on the employee development and human capital investment and recognise this investment as the value driver of the firms via external financial reporting, subsequently enjoy higher stock prices, the stock return was selected as one of the dependent variable to be examined as an impact of human capital expenditure and the disclosure (Bassi et al., 2004; Lajili and Zeghal, 2006 & 2005b). In studying the influence of intellectual capital disclosure to the external stakeholders in the Australian Stock Exchange

through the event study methodology, Dumay and Tull, (2007) have adopted cumulative abnormal return to reflect the impact on share price. Simultaneously, the market adjusted excess return has also been identified as another dependant variable to reflect the stock market performances over a period of time (Vithana and Gunaratne, 2009). However, due to the fact that the research sample is restricted to the FTSE 100 list of the London stock exchange the total stock market return is adopted in the hypotheses development as follows.

H 2.3: There is a significant positive relationship between investment in human capital and total stock market return (total stock return at time t)

The hypotheses developed above are basically aimed at the second research objective of discovering the determinants and the consequences of investment in human capital of the firm, while the first research objective of understanding the states of the practice, investment in human capital through the accounting and financial reporting recognition measured via human capital expenditure and disclosure is analysed via more qualitative techniques such as descriptive and exploratory. Therefore, the next section as well illustrates model specifications and the statistical data analysis model particularly relevant to the hypotheses testing under the second research objective.

4.9 DATA ANALYSIS

Data analysis and the results are presented in two different chapters addressing each of the research objectives. The first research objective of "understand the current practice, investment in human capital by listed firms as its reflected via accounting and financial reporting recognition of this investment conceptualised using human resource expenditure human capital per value added coefficient and voluntary disclosure of human capital information in firms' annual reports", is addressed in the first analysis and results chapter, where the analysis has mostly been limited to exploratory and descriptive statistical analysis facilitated via few inferential statistical analysis techniques. The descriptive statistical analysis undertaken in this chapter recognising the data set particularly the distribution of each variables through descriptive measures such as mean, standard deviation, median, skewness and kurtosis facilitated the inferential analysis in the subsequent chapter through data diagnosis and by way of remedying the problems such as, outliers and highly skewed distributions. As an example, depending on the skewness and kurtosis values, the impact of outliers on some variables are recognised and rectified via Winsorization mechanism at p(0.01) (Gosh and Vogt, 2012). In addition, graphical and numerical statistical analysis tools are mostly utilised for the purpose of providing an insight in to the practice of investment in human capital reflected via quantitative and qualitative means including, individual value creation factors and categorical and overall human capital disclosure indices.

The second research objective of "understanding the determinants and the expected consequences of investment in human capital by listed firms as reflected using

accounting and financial reporting recognition of this investment", is addressed in the second analysis chapter. This basically illustrates the inferential statistical analysis conducted for testing of hypotheses developed and illustrated in the previous section. The analysis was undertaken using STATA 12 statistical software. In order to perform the inferential analysis, initially, through the spearman and Pearson correlation techniques the correlation between independent and the dependant variables are examined and the through data diagnostic tests, the suitability of the variables for the model is determined and remedial measures are undertaken (Gujarati, 2004). The statistical tests used involve unbalanced panel regression with fixed effect estimator, random effect estimator and pooled linear regression. Using of all the three techniques help confirm the finings and robustness of the results. Hausman test (Hausman, 1978) is used for the choice over random effect and fixed effect estimators for the panel data analysis. Interpretation of results was undertaken considering 1%, 5% and 10% levels of significance. The model specifications and the regression equations for panel data analysis for the two models determinants and the consequences are given below.

4.9.1 Statistical model for determinants of investment in human capital

Considering the determinants of human capital investment via the accounting and financial reporting recognition of this investment, conceptualisation based on three proxies: human capital expenditure, human capital per value added and human capital disclosure are modelled with the potential determinants hypothesised above.

Therefore, research model illustrate the relationships of the above three proxies with firm specific and corporate governance related determinants as follows.

$$\mathrm{HCE}_t = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \cdots \ldots \ldots \ldots \ldots .. + \beta_{13} X_{13} + \varepsilon \quad (6)$$

$$\mathrm{HCVA}_t = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \cdots \ldots \ldots \ldots \ldots .. + \beta_{13} X_{13} + \varepsilon \quad (7)$$

$$\mathrm{HCD}_t = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \cdots \ldots \ldots \ldots \ldots .. + \beta_{14} X_{14} + \varepsilon \quad (8)$$

Where;

Investment in human capital measured in terms of;

HCE_t = Human Capital Expenditure (at time t)

$HCVA_t$ = Human Capital per Value Added (at time t)

HCD_t = Human Capital Disclosure index (at time t)

X_1 = Firm size

X_2 = Intellectual capital intensity

X_3 =Industry type: regulation

X_4 = Leverage (year t)

X_5 = Profitability (ROE at year t)

X_6 = Liquidity (year t)

X_7 = Board size

X_8 = Board composition

X_9 = Audit committee size

X_{10} = Audit committee meetings

X_{11} = Remuneration committee size

X_{12} = Remuneration committee meetings

X_{13} = Nomination committee size

X_{14} = Nomination committee meetings

β_0 = Intercept

β_1 -β_{14} = Regression coefficients

ε= Error term

4.9.2 Statistical model for consequences of human capital investment

The consequences of investment in human capital on employee productivity, profitability and the stock return of the listed firms, illustrated in the previous section via hypotheses development are tested using the following model specifications and the regression equations.

$$\mathrm{EP} = \beta_0 + \beta_1 \mathrm{HCE}_t + \beta_2 X_1 + \beta_3 X_2 + \cdots \ldots \ldots \ldots + \beta_6 X_5 \quad (8)$$

$$\mathrm{EP} = \beta_0 + \beta_1 \mathrm{HCVA}_t + \beta_2 X_1 + \beta_3 X_2 + \cdots \ldots \ldots \ldots + \beta_6 X_5 \quad (9)$$

$$\mathrm{EP} = \beta_0 + \beta_1 \mathrm{HCD}_t + \beta_2 X_1 + \beta_3 X_2 + \cdots \ldots \ldots \ldots + \beta_6 X_5 \quad (10)$$

$$\mathrm{ROAt} = \beta_0 + \beta_1 \mathrm{HCE}_t + \beta_2 X_1 + \beta_3 X_2 + \cdots \ldots \ldots \ldots + \beta_6 X_5 \quad (11)$$

$$\text{ROAt} = \beta_0 + \beta_1 \text{HCVA}_t + \beta_2 X_1 + \beta_3 X_2 + \cdots \ldots \ldots \ldots + \beta_6 X_5 \quad (12)$$

$$\text{ROAt} = \beta_0 + \beta_1 \text{HCD}_t + \beta_2 X_1 + \beta_3 X_2 + \cdots \ldots \ldots \ldots + \beta_6 X_5 \quad (13)$$

$$\text{ROA(t + 1)} = \beta_0 + \beta_1 \text{HCE}_t + \beta_2 X_1 + \beta_3 X_2 + \cdots \ldots \ldots \ldots + \beta_6 X_5 \quad (14)$$

$$\text{ROA(t + 1)} = \beta_0 + \beta_1 \text{HCVA}_t + \beta_2 X_1 + \beta_3 X_2 + \cdots \ldots \ldots \ldots + \beta_6 X_5 \quad (15)$$

$$\text{ROA(t + 1)} = \beta_0 + \beta_1 \text{HCD}_t + \beta_2 X_1 + \beta_3 X_2 + \cdots \ldots \ldots \ldots + \beta_6 X_5 \quad (16)$$

$$\text{TSRt} = \beta_0 + \beta_1 \text{HCE}_t + \beta_2 X_1 + \beta_3 X_2 + \cdots \ldots \ldots \ldots + \beta_6 X_5 \quad (17)$$

$$\text{TSRt} = \beta_0 + \beta_1 \text{HCVA}_t + \beta_2 X_1 + \beta_3 X_2 + \cdots \ldots \ldots \ldots + \beta_6 X_5 \quad (18)$$

$$\text{TSRt} = \beta_0 + \beta_1 \text{HCD}_t + \beta_2 X_1 + \beta_3 X_2 + \cdots \ldots \ldots \ldots + \beta_6 X_5 \quad (19)$$

Where;

Consequence of investment in human capital measured via ether

EP	= Employee productivity
ROA_t	= Profitability (return on total assets at time t),
$ROA_{(t+1)}$	= Profitability (return on total assets at time t+1)
TSR_t	= Total Stock Return - Contemporaneous (TSR at time t)

Different means of conceptualising human capital investment

HCE_t = Human Capital Expenditure

$HCVA_t$ = Human capital per value added

HCD_t = Human capital disclosure

Control variables;

X_1 = Firm size

X_2 = Industry type

X_3 = Leverage (t)

X_4 = Profitability (ROE at time t)

X_5 = Liquidity (t)

β_0 =Intercept

β_1-β_6 =Regression coefficient

ε = Error term

4.10 CONCLUSION

Based on the research gap identified at different levels via critical review of literature and the conceptualisation, the research methodology is developed and it link the action plan in scientifically addressing above identified research gaps. In summary, methodology chapter started with identifying the research philosophy and paradigm in general, highlighting the applicability particularly considering the subject matter under study, human capital investment and accounting and financial reporting recognition of firms' investment in human capital. The considerations

under methodology has further extended to ontological and epistemological issues leading to the overall research approach, research design and strategy, refining sampling, data collection and analysis techniques to achieve the research objective formulated addressing the gaps observed.

Careful analysis of the nature of science studying and the nature of the society in understanding and acquiring knowledge, has positioned the study towards positivistic end of the research paradigm spectrum. However, given the inadequate theoretical background, the research has not completely been in the extreme positivistic end of the paradigm and has shared the characteristics and the qualities of the phenomenology paradigm as well. As a result, a mixed approach has always been adopted in terms of the research design, approach, strategy, data collection and data analysis to facilitate a holistic view to the subject matter, investment in human capital and accounting and financial reporting recognition of this investment. Adopting a mixed research strategy and considering financial reporting recognition of human capital investment from different perspective considering both quantitative and qualitative aspects help facilitates the triangulation of results as well as a holistic picture of the subject. Moreover, starting from conceptualization, current study has brought in a novelty approach for the research. Following this mixed research methodology adopted, data analysis and the results are presented in the next two chapters separately based on the research objectives.

CHAPTER FIVE

ANASYSIS, RESULTS AND DISCUSSIONS

ACCOUNTING AND FINANCIAL REPORTING RECOGNITION OF HUMAN CAPITAL INVESTMENT

5.1 INTRODUCTION

The initial part of the analysis has basically been taken the form of exploratory and descriptive nature providing a better understanding about firms' investment in human capital. Addressing this, the practice human capital investment is explored and described in order to achieve the research objective of, 'understanding the current practice of investment in human capital by listed firms as its reflected via accounting and financial reporting recognition of this investment. Considering the current accounting and financial reporting practice, recognition of human capital investment is conceptualised using human resource expenditure, human capital contribution in firm value added and voluntarily disclosed human capital information in firms annual reports captured according to the framework developed in the conceptualization chapter. Data are collected from 210 annual reports, covering five accounting years 2009 (49 firms), 2008 (46 firms), 2007 (40 firms), 2006 (40 firms) and 2005 (35 firms) for the firms listed in FTSE 100 listing of London stock exchange. However, since the nature of data and data quality related issues have an impact even on descriptive statistical analysis and interpretation, a complete

description of data explaining the context as well is given prior to the descriptive analysis. Ultimately, the results of the descriptive analysis are interpreted and discussed in light of the previous empirical findings. This paves the way for further inferential analysis and hypotheses development in the subsequent chapters.

5.2 SAMPLE CHARACTERISTICS

Data collected in this study addressing the research objectives include firm specific characteristics, corporate governance characteristics, variables reflecting the accounting and financial reporting recognition of human capital investment, and expected consequences of firms investment in human capital measured as firm accounting and financial performance outcome and stock market return. Individual variables collected under each of these categories accompanied with measurement criterion and the variables key for statistical analyses are illustrated in the table 5.01 below.

Table 5.01: Variables and measurements of the study

Type of variable	**Variable**	**Measurement**	**Variable key in analysis**
Firm number	Firm number as the panel ID	Number representing each firm as categorical data	fnumber
Accounting year	Accounting year is the Time variable in panel data model	2009, 2008, 2007, 2006, 2005	acyear
Firm specific characteristic	Firm size	Market capitalization (£Mn)	firmsize firmsizel (for log)
	Industry	Industry categorisation according to FTSE listing	industry
	Intellectual capital intensity	Firms from high intellectual capital (1) industry or not (0)	intellectintensive
	Industry type: regulation	Firms categorised based on regulated industry sector, Bank and financial (1) not (0)	industrytype
Firm financial characteristics	Firm Leverage	Firm leverage Total debt/ Total equity ratio	curyrleverage
	Firm profitability	Return on equity	curyrprofityroe
	Firm Liquidity	Current asset ratio (Current asset/Current liabilities)	curyrliquidity
Corporate Governance characteristics of the firms	Board size	Number of directors in board	boardsize
	Board Independence	Number non executive directors /total number of directors	boardindep
	Audit committee size	Number of directors in audit committee	auditsize
	Nomination committee size	Number of directors in nomination committee	nomsize
	Remuneration committee size	Number of directors in remuneration committee	remsize
	Audit committee meeting	Number of meetings of audit committee	auditmeeting
	Nomination committee meeting	Number of meetings of nomination committee	nommeet
	Remuneration committee meetings	Number of meetings of remuneration committee	remmeet
Accounting and financial reporting recognition of firms investment in human capital	Human Capital Expenditure	Total human resource expenditure (in £Mn)	hcexp
	Human Capital per Value Added	Total HR expenditure/ total value added	vahcvahc
	Total Human Capital Disclosure Index	Index quantifying the total human capital disclosure	hcdisc
	Disclosure Index; Financial Perspective of BSC	Index quantifying the disclosure under financial perspective	ratfin
	Disclosure Index; Customer Perspective of BSC	Index quantifying the disclosure under Customer perspective	ratcus
	Disclosure Index; Internal Business Process Perspective of BSC	Index quantifying the disclosure under Internal Business Process perspective	ratibp

	Disclosure Index; Learning and Growth Perspective of BSC	Index quantifying the disclosure under Learning and Growth perspective	ratlag
Individual Human Capital Value Creation factors under Disclosure Indices			
Financial perspective	Employee compensation plan including share schemes	Score based on Extent of information disclosed according to balanced scorecard framework	empcomp
	Value added/revenue per employee	Score based on Extent of information disclosed according to balanced scorecard framework	varevperemp
	Employee expenses and Pension	Score based on Extent of information disclosed according to balanced scorecard framework	empexppen
Customer perspective	Employee involvement	Score based on Extent of information disclosed according to balanced scorecard framework	emp_invol
	Employee diversity and equity issues	Score based on Extent of information disclosed according to balanced scorecard framework	Empdiv_equi
	Industrial relations and union activity	Score based on Extent of information disclosed according to balanced scorecard framework	irunion
	Employee welfare and benefit	Score based on Extent of information disclosed according to balanced scorecard framework	welf_benefit
	Employee satisfaction and loyalty	Score based on Extent of information disclosed according to balanced scorecard framework	empsat_loyal
Internal business process perspective	Employee health and safety	Score based on Extent of information disclosed according to balanced scorecard framework	emphealt_safe
	Employee appreciation	Score based on Extent of information disclosed according to balanced scorecard framework	empapp
	Employee numbered	Score based on Extent of information disclosed according to balanced scorecard framework	empnum
	Employee featured	Score based on Extent of information disclosed according to balanced scorecard framework	empfeartured
	Human resource section and human resource functions	Score based on Extent of information disclosed according to balanced scorecard framework	hrsec_func
	Human resource director committee	Score based on Extent of information disclosed according to balanced scorecard framework	hrdircomm
	Work environment and culture of employees	Score based on Extent of information disclosed according to balanced scorecard framework	workenv_culture
	Value added strategy	Score based on Extent of information disclosed according to balanced scorecard framework	valueaddstrategy
Learning and growth perspective	Employee know-how and competency	Score based on Extent of information disclosed according to balanced scorecard framework	kh_comp
	Education and vocational qualification	Score based on Extent of information disclosed according to balanced scorecard framework	eduvocqual
	Career development	Score based on Extent of information disclosed according to balanced scorecard framework	careerdevt
	Employee training programme	Score based on Extent of information disclosed according to balanced scorecard framework	emptraining
	Employee experience	Score based on Extent of information disclosed according to balanced scorecard framework	empexperience
	Entrepreneurial spirit and innovation	Score based on Extent of information disclosed according to balanced scorecard framework	entrep_innov
	Employee motivation	Score based on Extent of information disclosed according to balanced scorecard framework	emp_motiv
Consequences: firm and stock market performance	Employee productivity	Employee productivity =Net Income before Minority Interest/Number of employees	empproduc
	Profitability at time t	Return On Asset (NP after tax/ total asset)	curroa
	Profitability at time t+1	Return On Asset (NP after tax/ total asset) at time t+1	next yrroa
	Stock market return	Total shareholder return (price appreciation and dividend)	stockreturn

According to the data collected, sample consists of firms representing the industry sectors: aerospace and defence, banks, beverages, electricity, fixed line communication, food and drug retailers, food producers, gas and water multi utilities, general industries, general retailers, household goods, life insurance, media, mining, mobile telecommunication, oil and gas producers, pharmaceutical and biotechnology, software and computer, support services, tobacco, travel and leisure, non-life insurance, general finance, healthcare equipment, construction and material, personal goods and real estate. Inclusion of a wide range of industries make the sample well representative of the FTSE 100 listing of the London stock exchange. However, in order to control for the industry variance in accounting and financial reporting recognition, due to the updated and more controlled regulations in some industries such as banks and financial related companies, insurance investment and financial services, property and investment companies and trusts, addressing the consequence of recent financial crisis, firms belonging these industries were categorised as firms belong to industries with more regulated financial reporting mechanism or otherwise for further analysis using dummy variables. Moreover, since some industries by nature accounts for higher intellectual capital (pharmaceutical and biotechnology, IT, telecommunication, business services, media and publishing, bank and insurance, food production and beverages), firms belonging to high intellectual capital industries as well are separately recognised using a dummy variable (Li et al., 2008 & 2012).

The sample firms used for the data collection with the industry they belong and the industry classification base on the regulated financial reporting mechanism is illustrated in the Appendix 2. The sample chosen for study accounts for around 26%

to 36% market capitalisation of the total market capitalisation of the London stock exchange while accounting for 34% - 44% of the FTSE 100 listing of London stock exchange for the duration under study (Table 5.02) making the sample relatively representative of the firms listed in the London stock exchange and considerably more representative of the FTSE 100 listing of the London stock exchange. The percentage market capitalisation of the sample has been increasing over the period of time due to the increasing sample size for the most recent accounting years. On the other hand, due to the data availability and the restrictions in the information disclosure aspects large number of firms have been excluded from the accounting years at the beginning of the study period (2005, 2006 compared to the other three years).

Table 5.02: Percentage Market Capitalisation of the Sample

Accounting year	**2009**	**2008**	**2007**	**2006**	**2005**
Market capitalization of the sample £ Mn	1304705.5	975879.6	1302541.4	1201424.1	1085866.0
Total market capitalization £ Mn	3588328	2939582	4329935	4397812	4092170
% Market capitalisation from total	36.3597%	33.1979%	30.0822%	27.3186%	26.5352%
Total market capitalisation of FTSE100 £ Mn	2931305.5	2460793.0	3398345.6	3383425.3	3174258.4
% Market capitalization from FTSE 100	44.509%	39.657%	38.329%	35.509%	34.208%

(percentage figures are calculated using the data collected from the annual reports and the total market capitalization figures gathered from the London stock exchange data: June, 2011)

Data collected from the sample are descriptively analysed in this chapter for two main reasons, first, to understand data in the context of the sample and main characteristics of the sample to help interpret the findings; and second, to understand the current status of firms' investment in human capital via accounting and financial reporting recognition of firms' investment in human capital, conceptualised using the

proxies: human capital expenditure, human capital per value added and human capital disclosure. The results for descriptive analysis illustrating the key sample statistics: mean, standard deviation, median, minimum and maximum, which help describe the sample is given in the table 5.03.

Table 5.03: Results of the descriptive data analysis

Variable	**Mean**	**Std deviation**	**Median**	**Minimum**	**Maximum**
Firm size	27954.4	29199.92	16920.04	4390.217	134376.3
Industry type: regulation	.243	.430	0	0	1
Industry type: intellectual capital intensity	.533	.500	1	0	1
Board size	12.981	2.575	13	6	22
Audit committee size	4.510	1.090	4	3	8
Nomination committee size	5.410	1.984	5	3	11
Remuneration committee size	4.563	1.102	5	3	8
Board composition/ independence	.707	.099	.714	.455	.929
Audit committee meetings	5.819	2.419	5	3	14
Remuneration committee meetings	5.596	2.207	5	1	14
Nomination committee meetings	3.743	2.227	3	1	15
Current year leverage	9.445	21.414	2.460	-72.391	205.1549
Current year profitability (ROE)	34.011	55.736	27.22	-94.37	712.4
Current year liquidity	.865	.680	.76	.04	6.56
HC expenditure	2852.09	2659.69	1852	44.637	14438.89
HCVA	.528	1.678	.353	.000471	24.325
Stock return	20.719	56.834	14.022	-87.037	474.892
Current year ROA	9.328	8.397	8.22	-12.8	33.34
Next year ROA	9.107	8.795	7.735	-12.8	43.54
Employee productivity	.079	.268	.032	-.268	3.051
Total Human Capital Disclosure Index	.575	.143	.574	.174	.887
Disclosure Index; Financial Perspective	.513	.204	.533	0	.933
Disclosure Index; Customer Perspective	.606	.185	.64	.08	.96
Disclosure Index; Internal Business Process Perspective	.593	.136	.6	.175	.925
Disclosure Index; Learning and Growth Perspective	.561	.206	.543	.086	.971

Table 5.04: Industry type representation in the sample

Year	**Number of firms from banking and financial industries**	**Number of firms from non banking and financial industries**	**Total**
2008/2009	8 (16.33%)	41 (83.67%)	49
2007/2008	10 (21.74%)	36 (78.26%)	46
2006/2007	11 (27.5%)	29 (72.5%)	40
2005/2006	12 (30%)	28 (70%)	40
2004/2005	10 (28.57%)	25 (71.43%)	35

According to the descriptive statistics, market capitalization of the sample ranged widely from £Mn. 4390.217 to £Mn. 134376.3 with a mean of £Mn. 27954 and standard deviation of £29199.92. Considering the composition of the sample firms, based on industry regulation classification, firms representing banking and financial sector, which is more regulated in terms of financial reporting, is represented as "1" while firms not representing banking and financial sector was valued "0". Therefore, the industry, each firm in the sample belongs and the categorisation based on firms belonging to banking and financial institutions with regulated financial reporting framework or firms which don't belong to banking and financial firms is illustrated in Appendix 2, while a summarised number of observations in each category is given in the table 5.04. According to the table 5.04, representation of the banking and financial institution sector in the sample from FTSE 100 listing of London stock exchange, has been reduced over the time period under review reflecting the turbulent situation in the banking and financial sector and faced by the industry.

Sample characteristics related to the corporate governance mechanism as well has illustrated in defining the context of the study since the impact corporate governance

mechanism proved to have an impact on accounting and financial reporting recognition of different aspects particularly the voluntarily recognised concepts such as human capital (Li et al., 2008). The number of directors of the board and committees varies as, board 6-22, audit, 3-8, nomination, 3-11 and remuneration, 3-8 implying that the minimum number of directors in audit, remuneration and nomination committees were always above the standard minimum of three according to the corporate governance code 2010, even though implementation of the code itself has not been mandatory for the firms. Board composition measured based on non executive directors to total number of directors (mean of 0.707 & std. deviation of 0.099) revealed that firms take efforts to maintain board independence by increasing the non executive directors and have paid special attention to reveal more information in relation to board independence during the most recent accounting years. However, confirming that non-executive directors are totally independent of the firm operations would have improved the validity of the results. The figures imply that even though both, the practice of corporate governance and accounting and financial reporting recognition of corporate governance practice were voluntary in nature, firms have adhered to both, reflecting the significance of government, academic and research initiatives on the practice (DTI, 2003a and b; Baker and Wallage, 2000; Li et al., 2008).

Firms investment in human capital measured as human resources expenditure have varied from £Mn. 44.637 to £Mn.14438.89 with mean of £Mn.2852.09 £Mn.2659.69 while the contribution human capital per value added ranged from .000471 to 24.325 with a mean of .528 (1.678) revealing even a high skewness (13.815) in the distribution. Descriptive statistics obtained in relation to human

capital expenditure, portion of human capital per value added and the human capital disclosure is further analysed from investment point of view relying on the human capital theory arguments in the next section.

5.3 DESCRIPTIVE ANALYSIS

Since accounting and financial reporting recognition of human capital investment is conceptualised in this study via the total of human resource expenditure, human capital per value added and disclosure of human capital information in the annual reports quantified using the disclosure index proposed in the conceptualization chapter, the next section of this chapter present the analyses of data gathered for the above proxies. The analysis aimed at understanding the current practice of accounting and financial reporting recognition of investment in human capital particularly referring to the value relevance of it from external stakeholders point of view. Results of the descriptive analysis are interpreted comparatively and in light of the previous findings.

5.3.1 Human Capital Expenditure

Human resources expenditure incurred does not exactly measure the investment in human capital of firms due to the revenue portion of expenditure included in the total human resources expenditure. However, relying on a labour economics approach of deriving human capital indicators based on investment on education, training, health and medical care, researchers have conceptualised firms' recognition of investment

in human capital using the labour cost (Lajili and Zeghal, 2005b and 2006). Labour cost and payroll cost has always been the starting point even in measuring firms' investment in human capital using different approaches (Lev and Schwartz, 1971; Brummet et al., 1968; Flamholtz, 1972; Edvinsson, 1997; Sveiby, 1997 and Pulic, 2000). Moreover, as it's the only financial parameter available in the annual reports, which is more comprehensible for almost all categories of stakeholders including the financially illiterate. This is evidenced via stakeholder response for labour cost voluntary disclosure in different context (Lajili and Zeghal, 2005b and 2006). Given the use of human resource expenditure to reflect investment in people is justified, the summary statistics related to human capital expenditure, human resource expenditure as a portion of value added, explain how firms' practices have changed over the period in consideration and the industry classification based on richer financial reporting and regulatory mechanisms.

The mean values related to the variables explaining human capital investment of the firms are illustrated graphically for the period under study considering the industry categorisation as well. The graphical illustration below covers human capital expenditure (figure 5.01), per employee human capital expenditure (figure 5.02), portion of human capital per value added (figure 5.03), employee productivity (figure 5.04) and number of employees (figure 5.05). According to the figures the total amount firms spent on employees has gradually increased from 2005/2006 till 2008/2009, particularly in banking and financial sector while the total amount spent on people in non-banking and financial sector has rather stagnated with slight ups and downs. The gap between two sectors, has gradually increased over the period reflecting the maximum difference in 2008/2009 accounting year. Despite economic

and financial crisis, firms in banking and financial sector appear to be constantly spending on their employees. This however, needs to be further examined in order to discover whether the continuous increase in amount spent on employees by the banking and financial industry sector is attributable to regulatory mechanism since, it is due to the high regulations governing the sector or the inclusion of large executive bonuses and salaries, since firms have always resisted regulation capping remuneration, particularly considering the executive remuneration and bonus schemes.

Figure 5.01: Human capital expenditure by industry and year

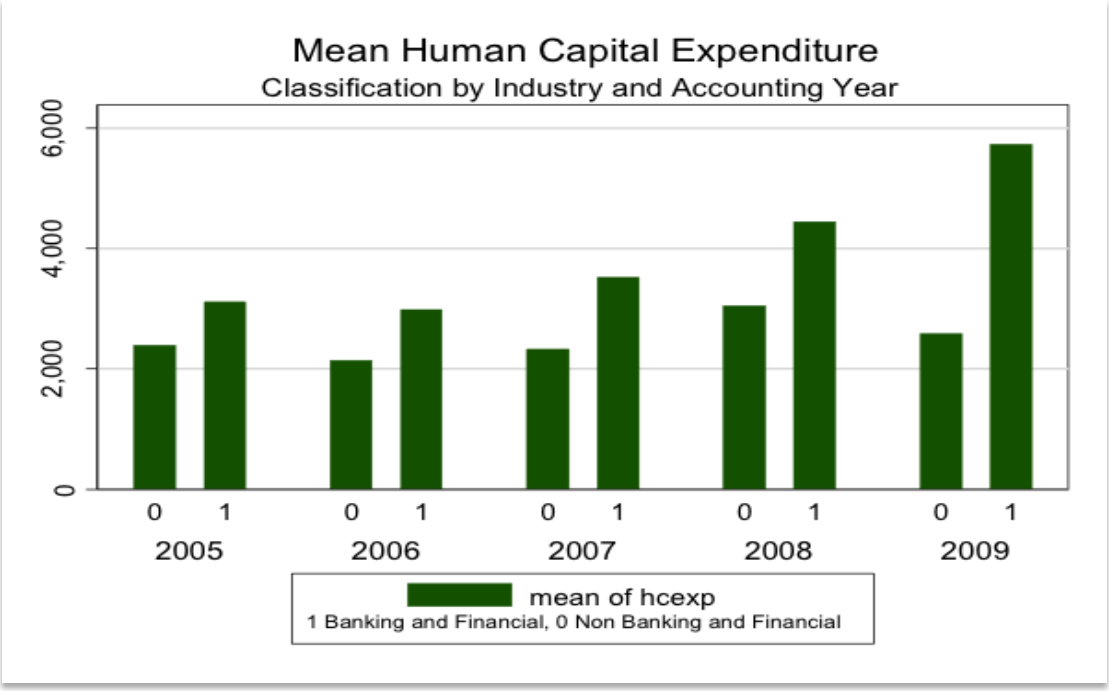


Figure 5.02: Per employee human capital expenditure by industry and year

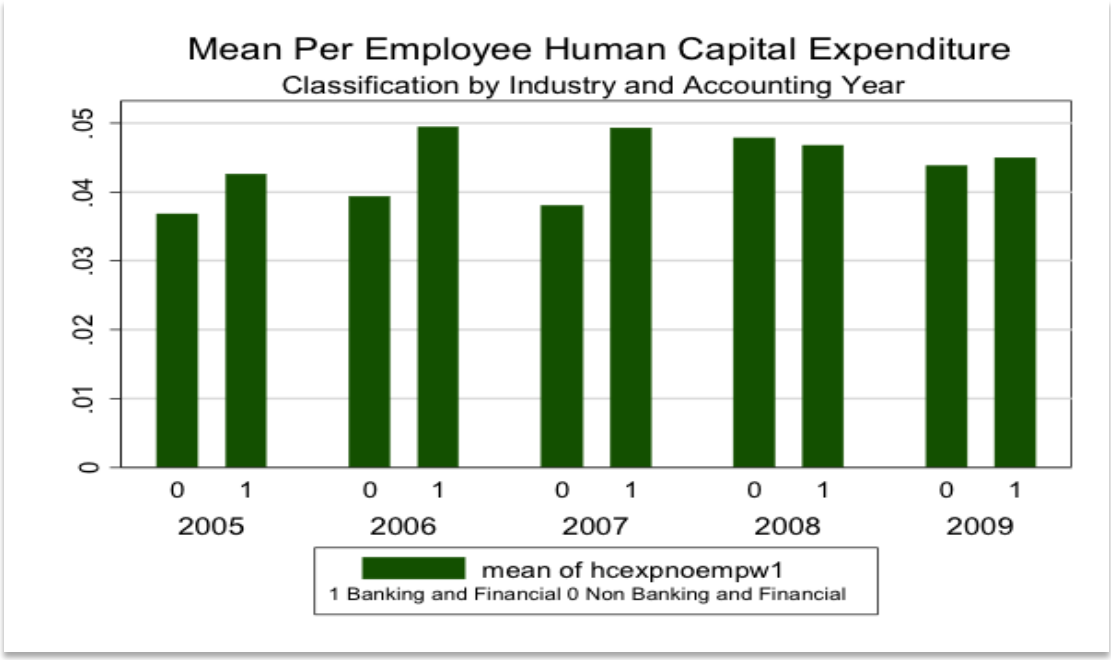


Figure 5.03: Portion of human capital per value added by industry and year

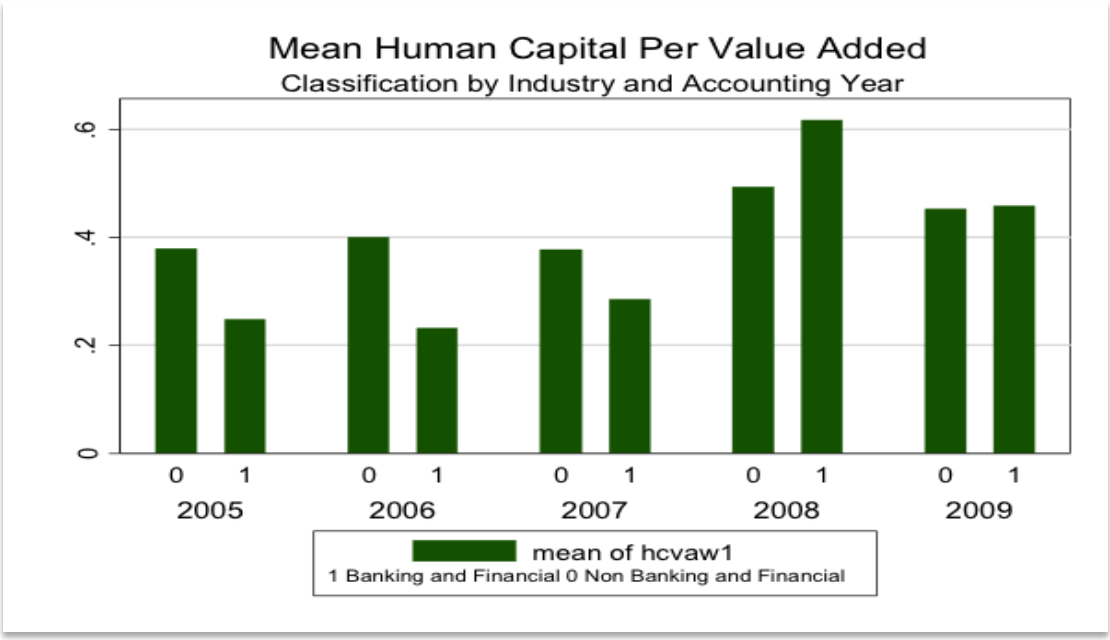


Figure 5.04: Employee Productivity by industry and year

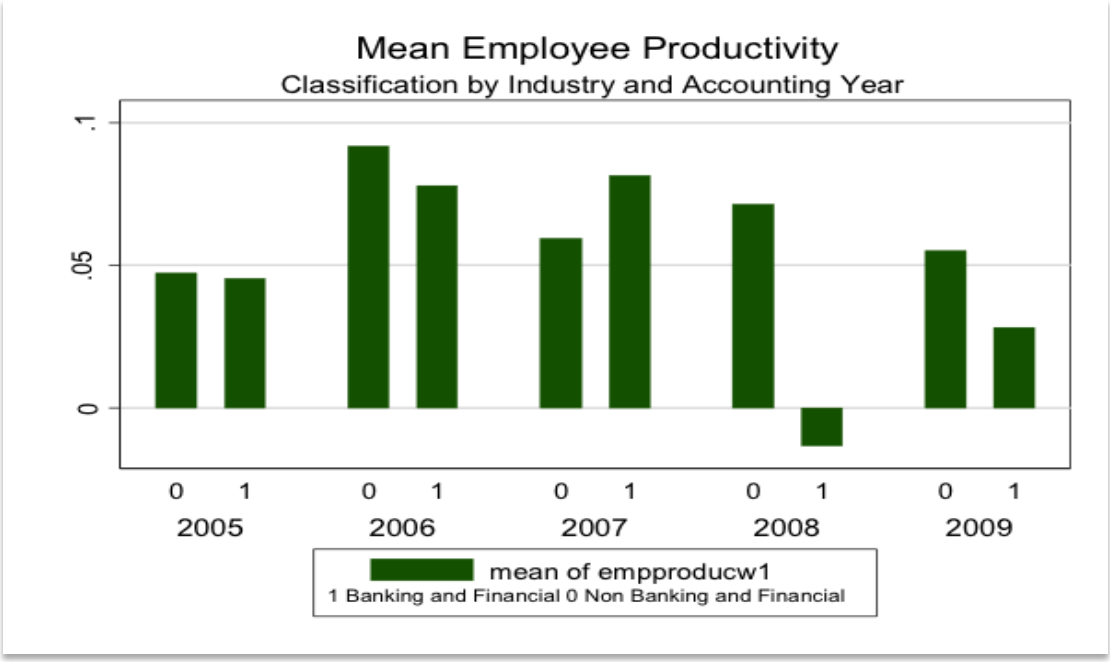
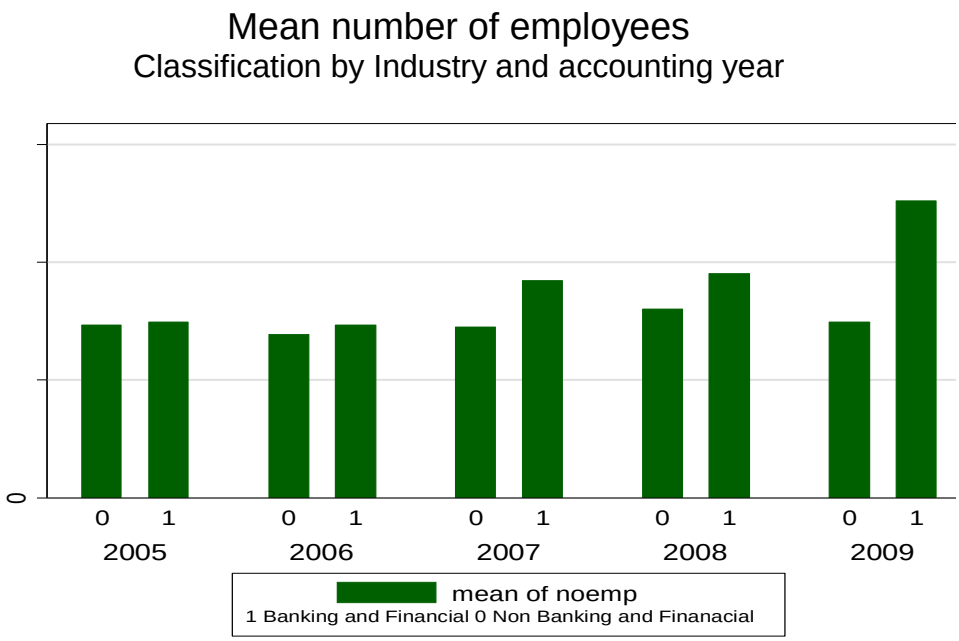


Figure 5.05: Employee Number by Industry and Year



However, in comparing the total human capital expenditure with the change in the average of per employee human capital expenditure and the number of employees the same trend could not be visible for both industries. Through the graphical analysis it is obvious that total human capital expenditure and per employee human capital expenditure and the number of employees for the non-banking and financial sector has mostly resembled the same pattern, while it has been the opposite for banking and financial sector firms. In Banking and financial industry scenario, the total amount spent and the number of employees have increased gradually over the period under consideration while per employee human capital has started dropping from 2006/2007 accounting year. This leads the question that firms investment in human capital reflected as the total human capital expenditure actually have enhanced the employees wealth, if the per employee value has rather declined over the time. On the other hand per employee human capital expenditure has considerably improved for the non-banking and financial sector firms compared to the banking and financial related industries. The impacts of the economic and the financial crisis on the investment in human capital has been reflected through the declines and the drops in employee productivity, portion of human capital per value added as well as per employee human capital expenditure considering both types of industries under analysis.

Despite the attempt to understand firms' investment in human capital via currently available information, existing problems related to the expenditure categorisation and the disclosure to the external stakeholders limit the usefulness of most of the information available for decision making about the firms. Issues such as, inadequate

classification to differentiate revenue and capital type of expenditure, misleading categorisation of directors' fringe benefits as well under the human resource expenditure leads to a considerable gap particularly in terms of recognising investment in each category of employees. The descriptive analysis of human resource expenditure and related items confirm the argument that there is a major problem with the current human capital investment practice as well as the accounting and financial reporting recognition of human capital investment. This implies that the practice needs to be enhanced especially considering the decision usefulness of the information generated via accounting and the financial reporting system (Abhayawansa and Abeysekera, 2008). This additionally confirms previous findings implying that a policy level change is essential and formally capturing human capital investment is a must as a part of accounting and financial reporting, aiming firm decision making of any sort from value relevance to multiple stakeholder point of view (Ax and Marton, 2008; Boedker et al., 2004).

The difficulty in understanding and comprehending the human capital investment in firms via quantitative and qualitative information available in financial statements and the annual reports under the current accounting and financial reporting practice arguably leave decision stakeholders at rather a confused stage (March, 1987). Not letting stakeholders appropriately understand the intangible wealth of the firms, most importantly the wealth stored in the firm employees, is misleading since intangible capital stored in employees in fact, determine the future success of firms. This was the justification behind, many researchers (Bassi and McMurrer, 2005; Brummet et al., 1968, Grove et al., 1977) attempt to propose and reviewed techniques in measuring, account for and recognising the investment in human capital, while some

of the studies have even been expanded to the policy formulation stage (DTI 2003 a & b) though a successful outcome could not be achieved due to the resistance from the accounting and financial reporting professional bodies themselves (Roslender, 2009; Roslender and Stevenson, 2009; Roslender et al., 2004). However, the implications of the descriptive analyses reveal that it's imperative to perceive employee contribution of the firm value creation and firms spending on employees from human capital theory point of view compared to cost control or the expenditure perspective.

Moreover, the deficiency in the current accounting system in capturing the investment in human capital of the firms have long been the debate among many researchers (Roslender, 1997; Bassi and McMurrer, 2005) and due to the unavailability of the formalised mechanism researchers and practitioners have attempted to compensate the practice via qualitative disclosure of human capital information under the financial reporting mechanism of the firms (Olsson, 1999 & 2001; Stittle, 2004). As a result, the financial reporting recognition of human capital investment via voluntary disclosure in the annual reports, has improved over the period of time while empirical evidence as well have mostly examined the financial reporting recognition of firms' human capital investment via voluntary human capital disclosure (Abhayawansa and Abeysekera, 2008; Abeysekera, 2008; Abeysekera and Guthrie, 2004; Guthrie and Petty, 2000; Subbarao and Zeghal, 1997) paying lesser attention to the valuation mechanism. Recognising this trend, the next section interprets the results of descriptive analysis on financial reporting recognition of investment in human capital via voluntary information disclosure paying attention to the value relevance of the practice. The implications of the

descriptive analysis have been interpreted in light of the previous literature and the conceptualisation as well.

5.3.2 Human Capital Disclosure

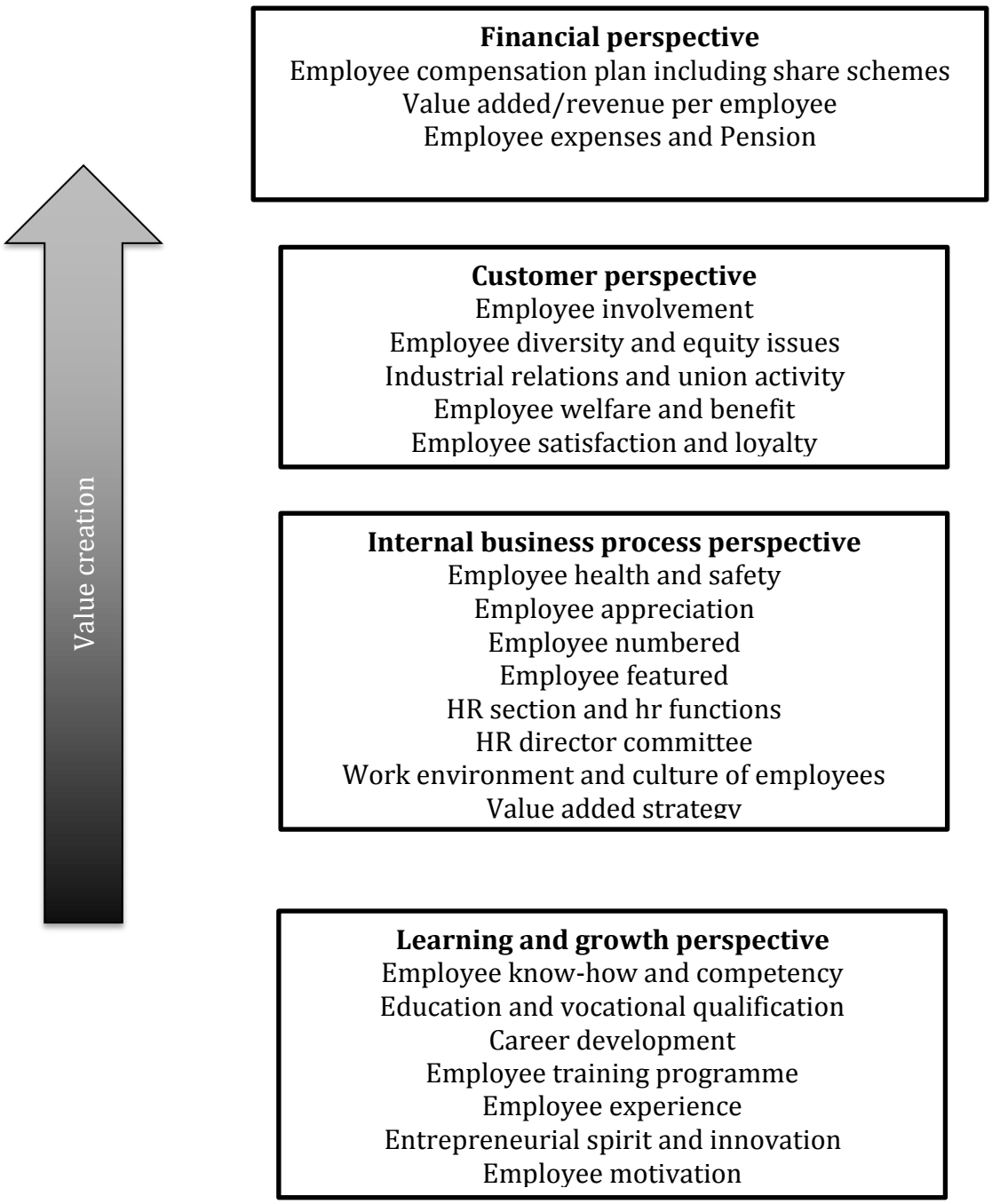
Empirical studies have evidenced that spending on employees has, in certain instances, resulted in positive financial outcomes for firms via contemporaneous or lead financial indicators (Lajili and Zeghal, 2006; 2005b). However, the descriptive analysis of the human capital expenditure, per employee human capital expenditure, and the portion of human capital per value added, have not convincingly evidenced that firms have actually perceived the outlay on human resource expenditure as an investment. Therefore, the most prominent and available financial implication of human resource management under corporate financial reporting (i. e. human capital information disclosed voluntarily in the annual reports) has been analysed descriptively to understand the investment in human capital practice. Due to the absence of an adequate, consistent and generally accepted framework to capture the financial reporting recognition of human capital investment via disclosure practice, human capital value creation scorecard proposed in the conceptualisation chapter is used for both descriptive and inferential analysis.

Human capital value creation scorecard proposed in the conceptualisation chapter based on balanced scorecard and human resource scorecard (Kaplan and Norton, 1992; Becker et al., 2001) was a major methodological contribution of the study as it provides a comprehensive framework to practice and evaluate firms' investment in

human capital through a multidisciplinary approach while the same could be used in terms of financial reporting recognition of human capital investment.

Under the descriptive statistical analysis however, the level of human resource disclosure is initially studied considering all the 23 value creation factors categorised according to the groups (i.e. learning and growth related disclosure, internal business process related disclosure, customer perspective related disclosure and financial perspective related disclosure) proposed in this study based on the balanced scorecard and human resource scorecard frameworks. In addition to the individual value creation factors, referring the firm, disclosure variance in financial reporting recognition of human capital investment have also been studied under the four categories, learning and growth related disclosure, internal business process related disclosure, customer perspective related disclosure and financial perspective related disclosure, in a way that firm value creation via human capital development is reflected. The contribution of human capital investment in firm value creation is illustrated in figure 5.06.

Figure 5.06: Firm value creation via human capital investment



(Model adopted based on Balanced scorecard framework of Kaplan and Norton, 1992 reflecting how investment in individual factors under each category contributes in firm value creation)

In determining the extent of financial reporting recognition of firms' human capital investment, as illustrated in detail in the methodology and the conceptualization chapter, both dimensions: human capital value creation factor and the levels of disclosure based on balanced scorecard perspectives were considered. Hence, the extent of reporting is determined based on the reporting (or not) under each human capital value creation factor considering the information disclosed under each of the levels of balanced scorecard: objectives, measurements, targets and initiatives accompanied by "achievement", an additional, however, a very prominent level in terms of performance evaluation practices. This, provided a two dimensional approach to the quantification of human capital disclosure index. Information disclosed under each human capital value creation factor is therefore measured by following the most widely used criteria disclosure (1) or not (0) considering the information availability under the value creation factors for each level of reporting and the scores (1) or (0) are assigned depending on the information disclosed in annual reports. In order to get the total human resource disclosure of a particular firm for individual human capital value creation factor, the sum of the scores under each level of reporting was calculated and the figure varies between 1-5. This framework (figure 5.06), in addition to being a strategic human resource management tool, is capable of capturing the value relevance of human capital investment particularly since, the visual representation of strategic intent help facilitate understanding of, how organisational resources especially intangibles are used for firm value creation (Marr et al., 2004).

Using the results obtained, the types of human capital information and the extent of human capital information disclosed are analysed and elaborated via descriptive

statistical analysis. For this purpose, descriptive statistics of the sample have been calculated for both categorical human capital disclosure indices (Table 5.05) and individual value creation factor (Table 5.06) which then is followed by a graphical interpretation.

Table 5.05: Descriptive statistics for human capital disclosure indices

Variable	Mean	Standard deviation	Median	Minimum	Maximum
Human capital disclosure index	.576	.143	.574	.174	.887
Disclosure index for financial perspective	.513	.204	.533	0	.933
Disclosure index for customer perspective	.606	.185	.64	.08	.96
Disclosure index for internal business process perspective	.593	.136	.6	.175	.925
Disclosure index for learning and growth perspective	.561	.207	.543	.086	.971

Table 5.06: Results of Descriptive Analysis: Human capital value creation factors

Human capital value creation factor	Mean score	Standard deviation of the score	Minimum score	Maximum score	Median
Employee compensation plan including share schemes	3.5	1.575	0	5	4
Value added/revenue per employee	.510	1.077	0	5	0
Employee expenses and Pension	3.681	1.674	0	5	5
Employee involvement	3.848	1.539	0	5	5
Employee diversity and equity issues	3.457	1.631	0	5	4
Industrial relations and union activity	1.838	1.575	0	5	2
Employee welfare and benefit	3.3	1.587	0	5	3
Employee satisfaction and loyalty	2.705	1.642	0	5	3
Employee health and safety	3.619	1.755	0	5	5
Employee appreciation	2.948	1.045	0	5	5
Employee numbered	3.729	1.355	0	5	4
Employee featured	1.791	1.134	0	4	2
Hr section and hr functions	3.576	1.318	0	5	4
Hr director committee	.891	1.211	0	5	0
Work environment and culture of employees	3.895	1.319	0	5	4.5
Value added strategy	3.267	1.413	0	5	3
Employee know-how and competency	3.467	1.302	0	5	4
Education and vocational qualification	2.495	1.955	0	5	2
Career development	3.310	1.579	0	5	3
Employee training programme	3.586	1.641	0	5	4
Employee experience	2.767	1.440	0	5	3
Entrepreneurial spirit and innovation	2.048	1.417	0	5	2
Employee motivation	1.957	1.317	0	5	2

Mean disclosure indices value for the overall human capital disclosure and the categorical disclosure have graphically been illustrated. Figure 5.07 illustrates the variance in categorical human capital disclosure indices with time. This illustration has further expanded in figure 5.08 and has compared the change in the categorical human capital disclosure indices comparative to the overall human capital disclosure indices considering the industry differentiation as well. The industry categorization (i. e. banking and financial industry vs. non banking and financial) is considered in descriptive analysis as well due to the enhanced financial reporting framework associated with banking and financial industry.

Figure 5.07: Mean disclosure index values

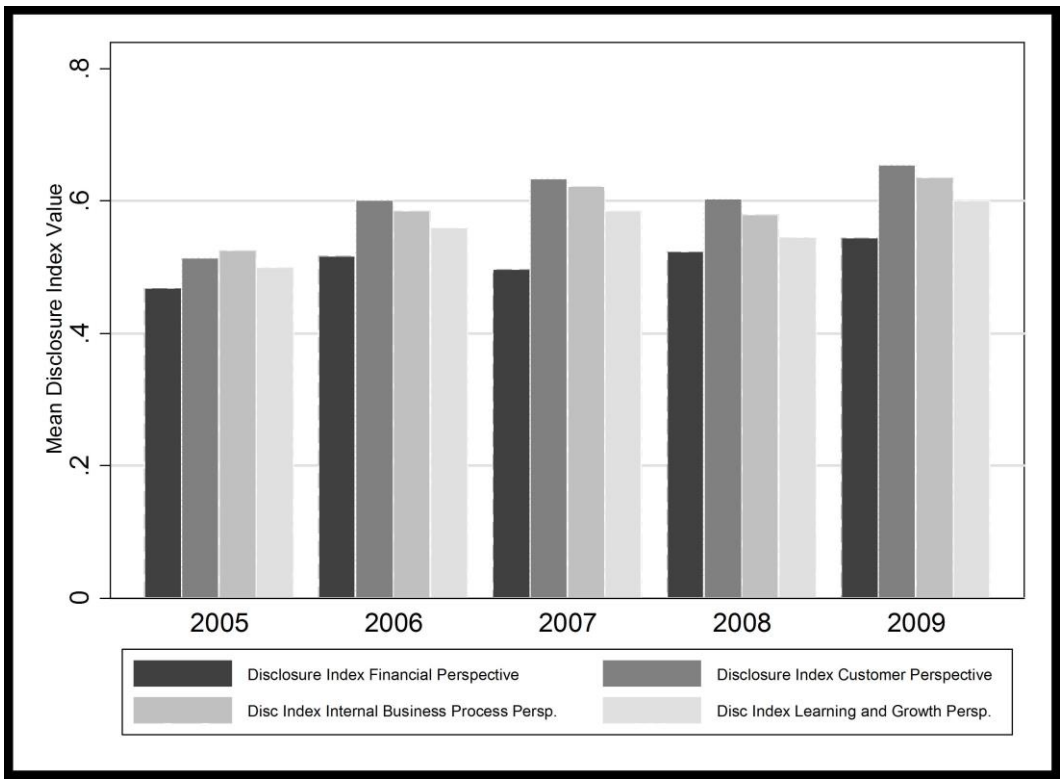
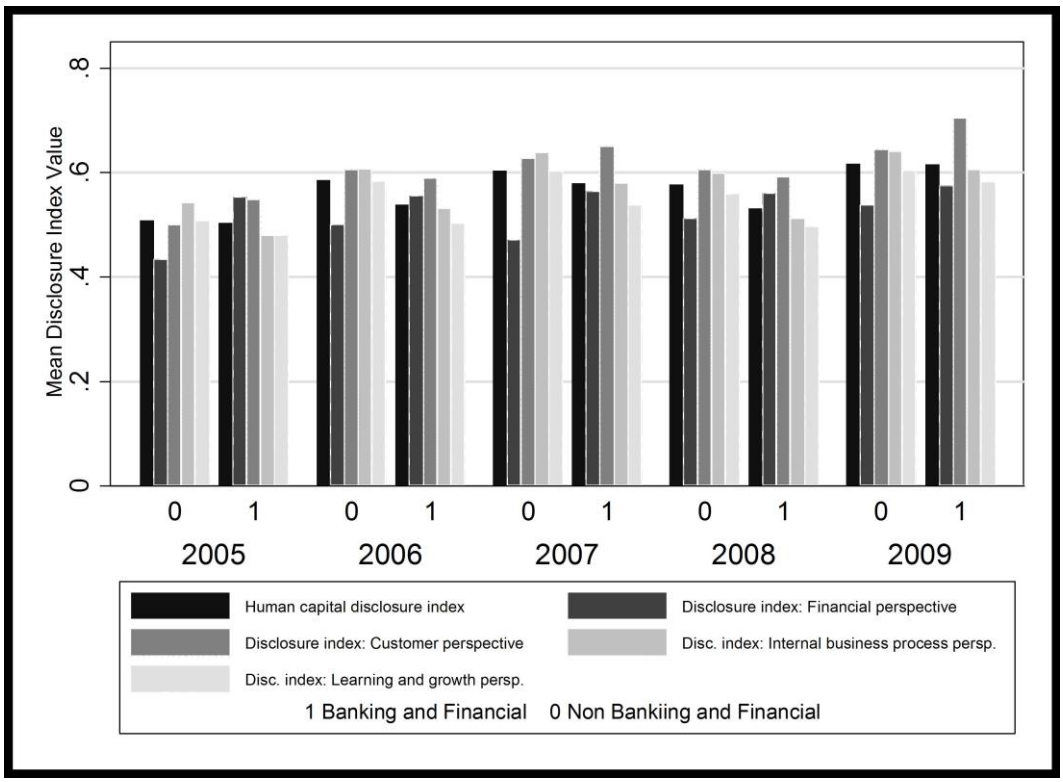


Figure 5.08: Human capital disclosure indices value by accounting year and industry



According to the graphical presentation (figure 5.07 and 5.08), except for accounting year 2007/2008, on average the overall human capital disclosure index reflecting the financial reporting recognition of human capital investment of firms via voluntary disclosure has increased over the period of time. This in fact may have been a reflection of firms' attempts in compensating the inadequacy in accounting mechanism in recognition of human capital investment of the firms or a result of increasing effort in voluntary financial reporting in the recent past (Ax and Marton, 2008; Abeysekera, 2008; Abeysekera and Guthrie, 2005 & 2004).

The periodical change in reporting reveals that except for the accounting year 2004/2005, human capital value creation factors recognised under customer

perspective and internal business process perspective have become the most recognised human capital information category, while the financial perspective and learning and growth perspectives respectively have become the least recognised for all the years in the analysis. This implies that what is build up on the foundation on human capital development, how the organisational operations and functions are designed aiming to enhance value creation via employees and how firms attempt to recognise and enhance the general perception on employees in broader customer perspective, is highly recognised in financial reporting while the financial outcome, impact or the significance attached to all the previous attempts have not been recognised appropriately.

Accordingly, employees stake in the firm in terms of diversity, equity, involvement, welfare, benefit, satisfaction in perceiving employees as an internal customer via broader customer perspective has highly been recognised. Recognition of this in financial reporting is followed by the recognition of human resource process mostly explaining the human resource management function, administrative aspects etc., which builds upon the foundation of human capital employees bring in to the firm. This includes how the organisational operations, functions, work environment and cultures are designed aiming to enhance value creation via employees. While the above two aspects are mostly recognised, the foundation in terms of firm value creation via employees including what they brings in to the firm and what they develop by being a part of the firm as experience (i.e. learning and growth perspective) which makes employees suitable for the role they play in the firm have received lesser recognition. Despite the lesser recognition observed thorough the descriptive analysis, value creation factors categorised under learning and growth

perspective reflects the human capital accumulated in employees through education and vocational qualifications, general training and development, experience gained etc. and the initial investments firms made on employees such as induction, job specific training etc.

In addition, the results revealed that human capital value creation factor reflecting the financial implications and outcome, including value added contribution by the employees revenue/ profit per employees, employee share and share option schemes, compensation plans etc. have not been recognised appropriately. Providing information on value creation factors belonging to financial perspective category provide a balanced opportunity for stakeholders in general to gather knowledge on both positive and negative financial implications on human capital investment. The least recognition of how investment in human capital assists in firm value creation via financial perspective of the firms could be argued from different point of view and little or no disclosure on ultimate financial impact of firms' investment in human capital is recognised as a major area requiring attention in studying the accounting and financial reporting recognition of human capital investment by firms. Therefore, the least recognition of human capital investment from both financial and learning and growth perspectives, results in an information asymmetry leading external stakeholders to question, why exactly do firms need to treat employees as an investment rather than just treating them as an expenditure. Moreover, the least recognition of information belonging to the financial perspective and learning and growth perspective being the front and the back end of accounting and financial reporting recognition of human capital investment, reflecting the human capital value creation makes the overall financial reporting recognition of human capital

investment incomplete specially considering the decision usefulness for all the stakeholders in general and to the external in particular.

Moreover, even though researchers have claimed that advanced regulatory frameworks applied to some industries such as banking and financial, have had a significant impact on accounting and financial reporting recognition of voluntary information disclosure in general (Lindblom, 1994; Campbell, 2000) and even intellectual capital related aspects in particular (Amir and Lev, 1996), the graphical analysis of descriptive data differentiating four main disclosure categories by industry type and accounting year (figure 5.08) did not reveal considerable differences and mostly followed the same pattern, except for the fact that firms belonging to banking and financial industry have recognised more information on the financial perspective compared to firms belonging to non banking and financial industries. The difference may have been attributable to the enhanced reporting requirements of banking and financial industry while provision of more information to compensate some adverse quantitative indicators such as decreasing value added contribution to the employees, per employee human capital expenditure etc. or even information manipulation considering the possibility for an aspect such as human capital disclosure given the voluntary nature as well as the non availability of a standard framework governing the practice. The inferential analysis in the next chapter is particularly aimed at providing more statistical evidence in this regard, considering both time effect firm effect and the industry membership under the determinants of accounting and financial reporting recognition of firms investment in human capital.

In a more detail level of disclosure, according to descriptive statistics of individual human capital value creation factors: work environment and culture, employee involvement in decision and community activities, employee numbered and the demographic analysis, employee expenses and pension, employee health and safety, employee training programmes and human resource management and human resource functions respectively, were the most recognised human capital value creation factors in the annual reports. On the other hand, value creation factors: value added or revenue contribution per employees, human resource director involvement and human resource committee functions, employee featuring and representation in the annual reports industrial relations and union activities, employee motivation, entrepreneurial spirit and innovations and educational and vocational qualifications respectively were the least recognised human capital value creation factors in the annual reports. The results of the current study confirms the finding of a study covering an international reporting environment covering UK, USA, Canada, Japan, Germany, and South Korea (Subbarao and Zeghal, 1997) in relation to most reported items such as employee benefit, employee numbers, human resource management and function related information, value added strategy employee expenses and pension and even for least reported items such as human resource director involvement and human resource director committee, employee featured, industrial relations and union activities and value added statement.

Particularly considering the value added statement reflecting the firm value added distributed in between key stakeholder categories including shareholders, employees, debt holders and the governments, UK firms had not disclosed at all for the duration 1993/1994 (Subbarao and Zeghal, 1997). A similar situation is observed in the

current study as well indicating that only a handful of firms have recognised this item in the annual reports, becoming the least reported item in the annual reports out of all the human capital value creation factors. Firm value added, being an alternative criterion measuring firm performance with lesser susceptibility for manipulation as it is for the profit, leading to a wide spread application and recognition else where in the world, (Subbarao and Zeghal, 1997; Abeysekera, 2007; Guthrie and Petty, 2000; Abeysekera, 2008), is one of the least recognised factor in financial reporting by UK firms revealing the inadequacy in the existing financial reporting system in general as well as in considering the financial reporting recognition of firm value creation by employees in particular as an important criterion in recognising human capital investment. Apart from the least financial reporting recognition, while both total human capital expenditure and per employee human capital expenditure is higher for banking and financial industry firms compared to the non banking and finance industry firms, the portion of value added distributed to the employees have been reportedly lower for banking and finance sector compared to the non banking and finance sector firms. This provides a clear indication on inappropriate value added distribution among the key stakeholders in banking industry, as it clearly would be a reflection of firms' stakeholder perception on employees (i. e. an expenditure to minimise). The current accounting and financial reporting reflection of treating employees as an expenditure lowering firm profit may create significant negative consequences not only by reducing the value added distributed to the employees but also in weakening the intellectual asset base of the firm leading adverse conditions for the future.

Increasing recognition of some aspects such as health and safety, employee diversity and equity issues could be justified via legitimacy arguments. Significantly higher disclosure on health and safety and employee diversity have reassured the findings of ACCA (2009) study on human capital management and investment via financial reporting recognition of human capital investment undertaken by assessing the information disclosed in the annual reports. Increasing recognition of these aspects have been a result of the existing legislation framework in relation to health and safety and equal employment opportunity and diversity related regulations.

Comparing the results with the previous empirical evidence and the theoretical basis of human capital investment, despite being different from the previous findings in different context (Abeysekera, 2007; Guthrie and Petty, 2000; Abeysekera, 2008) and even covering UK samples (Li et al., 2008), unrecognised items which are the foundation for human capital investment in firm value creation leave firms' practice of investment in human capital in a questionable state. As an example, value creation factors categorised under learning and growth perspective such as, educational and vocational qualifications, entrepreneurial spirit and innovations, employee motivation etc. are the foundation upon which human capital of the firm is developed. Therefore, the fact that these factors are least recognised through the accounting and financial reporting mechanisms of the firms implies, the inadequate consideration of human capital investment by firms as well. However, in certain instances, deviation of the results from previous empirical evidence must have been attributable to the differences in the frameworks used in capturing the disclosure practice by different researchers in different context. In addition, number of firm specific and corporate governance related characteristics as assumed to have been

attributable to the variation in accounting and financial reporting recognition of firms investment in human capital which are tested at a late stage of this study.

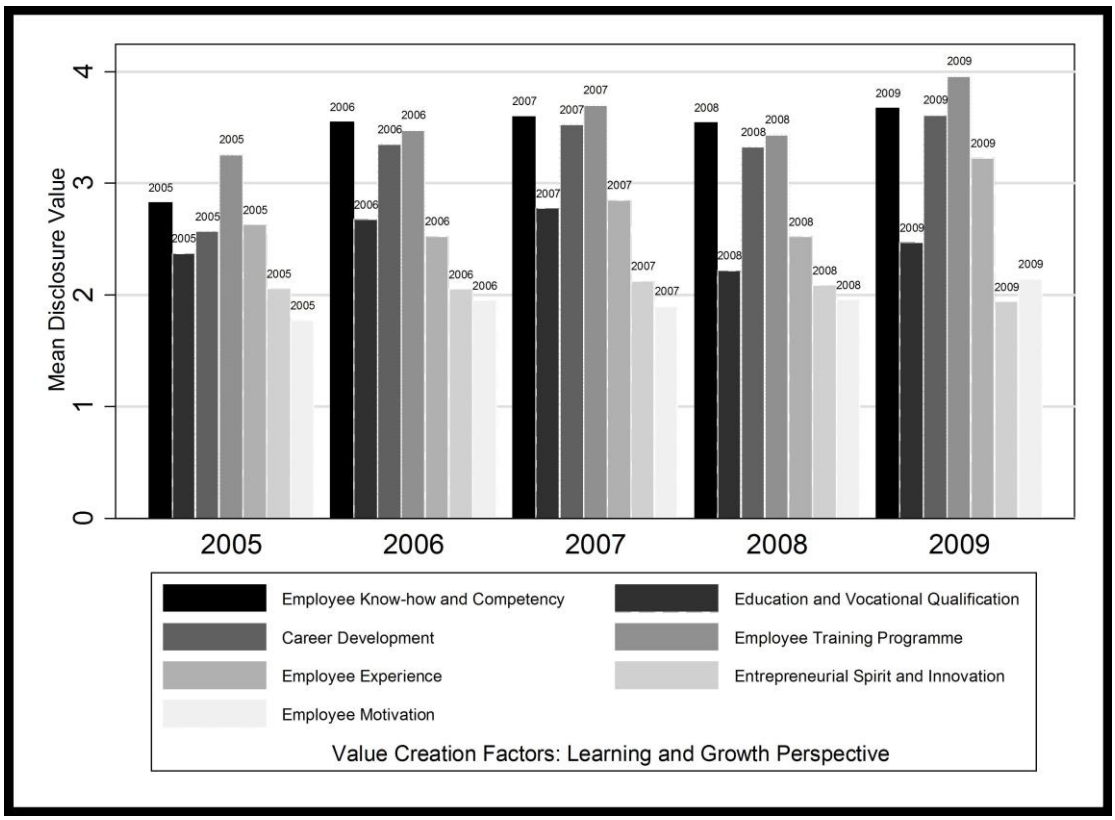
Apart from analysing individual human capital value creation factors, human resource information disclosure is analysed considering the overall human capital disclosure index of the firm and the four sub indices representing the disclosure categories based on the human capital value creation scorecard framework developed under conceptualisation. In this analysis, considering each category under the balanced scorecard framework, present situation on the disclosure of human capital value creation factors studied are further elaborated paying attention to the content of information disclosed in the annual reports considered within specific context reflecting firm value creation. The implications of descriptive analysis of human capital value creation factors categorised under each perspectives: learning and growth, internal business process, customer perspective and financial perspective are comparatively interpreted within the context considering the previous empirical evidence as well as theoretical justifications.

5.1.1.1 Learning and growth perspective

Human capital value creation factors categorised under learning and growth perspective basically consists with the human capital employees bring in with them to the firm by way of knowledge skills and attitudes developed in them via formal education, vocational training, real life experience or experience in previous employment. As it's proposed by Kaplan and Norton (1992 and 2001) value creation

factors categorised accordingly under learning and growth of employees in the firm environment will present firms with a motivated and prepared workforce to undertake firm functions and operations. Therefore, accounting and financial reporting recognition of the above factors in annual reports communicate information on firms investment in human capital at the foundation level it self to the relevant stakeholders. Measuring the disclosure according to the availability of information reflecting each level of the human capital value creation scorecard, proposed in the conceptualization chapter (i.e. objectives, measurements, targets, initiatives and achievements) provide stakeholders with adequate information on contribution of each factor in the firm value creation. Mean disclosure score values for the seven value creation factors under the learning and growth perspective are illustrated in figure 5.09. According to the graphical illustration, financial reporting recognition of the firms' investment in human capital under learning and growth of the employees has improved marginally over the period except for the drop in 2007/2008. Employee training programme, know-how and competency and career development were the most recognised items while employee motivation, entrepreneurial spirit and innovations and educational and vocational qualifications, were the least recognised items.

Figure 5.09: Mean disclosure score: Learning and growth perspective



The results have deviated from previous findings covering different geographical locations (e.g. Abeysekera, 2007; Guthrie and Petty, 2000; Abeysekera, 2008; Subbarao and Zeghal, 1997) and even from those covering UK samples (Li et al., 2008). Apart from highly skilled category and professional education such as medicine, accountancy, engineering etc., educational qualification is mostly understood as human capital development aspect in general and as a part of public investment in human capital development too. In certain instances vocational qualifications acquired outside the organisational environment as well could be a part of this general investment in human capital while what is acquired during the employment may be comparatively firm specific. As a result, education qualifications and professional qualifications in certain instances have not

completely been related to the firm operations and functions. This has been obvious even via implications of current study as firms have paid more attention to attributes, which determine firm value creation from the firm specific point of view such as employee training programme, know-how and competency and career development, while educational and vocational qualification of the employees have not been widely recognised. These results could even be justified using the arguments proposed by Becker (1964) on training employees in competitive labour market. According to Becker (1964), firms providing general training which would not bring uniqueness and specific return for the firms would expect employees pay the cost via compensation mechanism as they will have future returns for themselves. Moreover, in situations where firms develop employees for general skills due to the fact that firms do not own them making it a riskier investment as well, firms may have to adopt competitive pay structures. On the other hand, when firms are investing on firm specific know-how and competency, firms tend to pay more attention to the employee relations aspects such as developing the career of the employees within the firm. This may have resulted in recognising more on employee training and development which are specific to the firm compared to educational and vocational qualifications employees have acquired which is a part of human capital investment in general of the firms.

Moreover, the foundation of human capital as a valuable asset depends on how entrepreneurial and motivated the workforce is in generating more wealth for the firm, compared to what the physical capital itself would do. This has been reflected via previous studies from UK and other developed country contexts as well (Li et al., 2008; Guthrie Petty, 2000; Pedrini, 2007; Stittle, 2004; DTI 2003a & b; Roslender et

al., 2004). Even though the factors such as employee motivation and entrepreneurial skills have not been recognised as universally important through the annual reports of the firms in the current study, the same factors have been recognised as important in researches conducted particularly covering high intellectual capital companies in UK context (Li et al., 2008), implying that intellectual capital intensive nature of the firm itself has an impact on the accounting and financial reporting recognition of related factors such as entrepreneurial skills and innovations. Despite increasing motivation via proposed policy changes (DTI, 2003a & b; Roslender et al., 2004; Roslender and Stevenson, 2009) and previous researchers highlighting the importance of treating employees as assets (Stewart, 1997) and motivating them highly in order to make them willingly share and apply their knowledge for not just human capital but overall intellectual capital development (Abeysekera and Guthrie, 2004), employee motivation has not been widely recognised through financial reporting. This further emphasise the reluctance of practitioners in recognising the human component as capital rather than a labour cost.

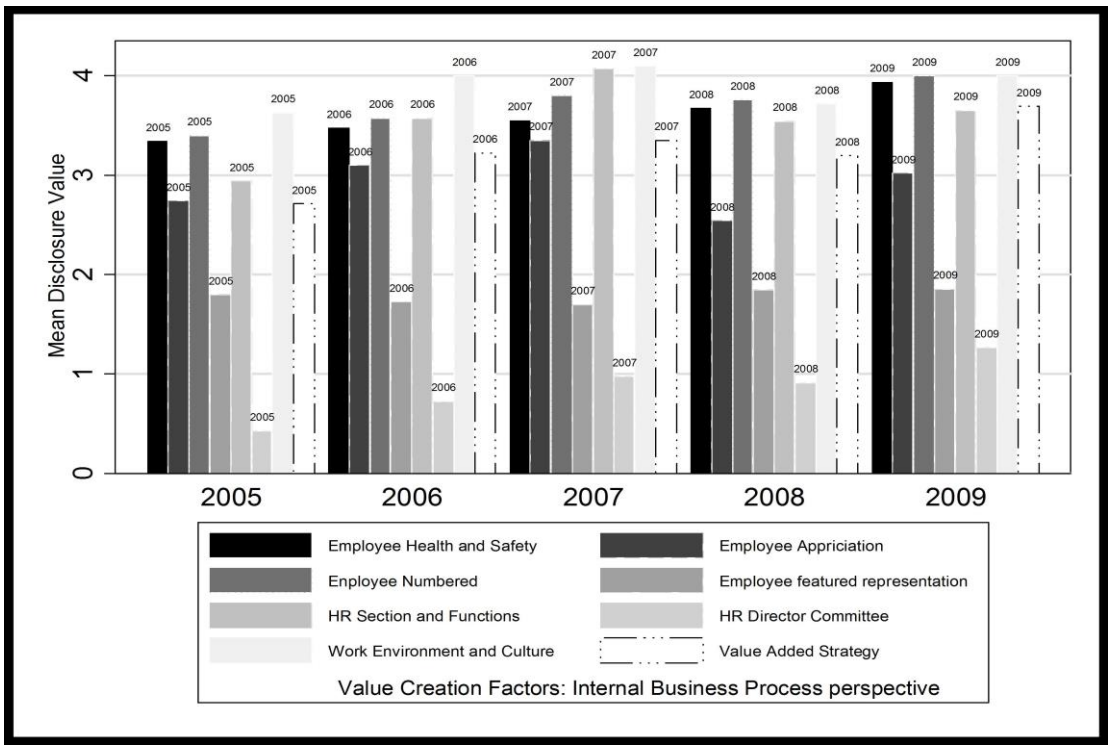
5.1.1.2 Internal business process perspective

Considering the contribution each of the value creation factors, value added strategy (indicating how human capital development strategy contributes to the strategy of the firm), work environment and culture, human resource management and human resource functions, human resource director committee (particularly the involvement of the top management in human capital development apart from the mandatory aspects under corporate governance such as functions of remuneration and

nomination committees), employee feature representation in the annual reports, employee numbered and the demographic analysis, employee appreciation (especially highlighting their contribution, appraisal of and rewards for their contribution) and employee health and safety have on what firms must excel at in developing operational excellence, they have been categorised under the internal business process perspective.

According to the mean disclosure score value results illustrated in the figure 5.10, work environment and culture, employee numbered and the demography analysis, employee health and safety and human resource management and human resource functions respectively has become the most recognised human capital value creation factors. Whereas, human resource director committee, employee feature representation and value added strategy particularly considering the employee contribution and reflection on firm value added strategy respectively become the least recognised human capital value creation factors under the internal business process perspective. Findings have been inline with some previous studies conducted in the UK context (Li et al., 2008; Subbarao and Zeghal, 1997) considering some factors such as employee numbered and demography analysis. As discussed under the overall disclosure attributes as well, results have been in line with UK human capital disclosure considerations revealed as a part of an international human capital disclosure comparison (Subbarao and Zeghal, 1997).

Figure 5.10: Mean disclosure score: Internal business process perspective



Financial reporting recognition of most reported items such as work environment and culture and employee numbered including demography analysis has increased over the period under consideration, except for the drop in 2008, which might have been a reflection of the onset of the financial and economic crisis. The results have confirmed previous research findings even in different geographical point of view (Abeysekera and Guthrie, 2004; Cuganesan, 2006) with slight deviation in different value creation factors. Despite the crisis environment, employee health and safety has steadily been recognised over the period and the amount disclosed have reflected an increasing trend which is a significant improvement compared to the previous evidence on health and safety disclosure by UK firms (Subbarao and Zeghal, 1997). The results have reflect the enhanced consideration in terms of the regulatory mechanism related to health and safety regulations and employment law in UK,

paying attention to the employees right to work in environment where the risk to their health and safety are properly assessed and controlled. This enhanced regulation has resulted in recognising the human capital investment as a part of financial reporting recognition under human capital, intellectual capital and corporate social responsibility reporting (Pedrini, 2007; DTI, 2003a & b; GRI, 2006).

Significantly higher recognition on value creation factors such as work environment and culture reveals firms' tendency to treat employees as an asset or an investment to a certain extent. As an example, creating proper work environment with an appropriate compensation mechanism, and career development opportunities and pathways promoting organisational citizenship behaviour coupled with life long employment (Boedker et al., 2004), motivate employees to voluntarily contribute to the firm value creation using their human capital (Abeysekera and Guthrie, 2004; Cuganesan, 2006). Moreover, positive implication of financial reporting recognition of work environment and culture on firms human capital investment has even been highlighted via previous conceptual studies, recognising the work environment and the culture of the organisation it self as the human capital of third kind (Flamholtz, 2005), in which case the additional economic value of human capital of third kind or the corporate culture is separately recognised from those of individuals and the groups operating in the firm.

In the absence of financial measure quantifying the investment in human capital, employee number and the demography variation measurement has been a method of understanding the relative investment in firms' human capital. As a result, it has

been recognised as an item reflecting the firms' investment in people in most of the disclosure studies in general as well as studies on human capital and intellectual capital investment of firms (Barako et al., 2006; Abeysekera and Guthrie, 2004; Abeysekera, 2008), while it has been a widely recognised value creation factor for a long period of time (Subbarao and Zeghal, 1997; Li et al., 2008; Abeysekera, 2008).

Employee health and safety, despite being an important consideration in human capital investment as reflected via financial reporting recognition of the current study and policy proposals (DTI, 2003a & b, ACCA, 2009), has been recognised as a component under corporate social responsibility (Rizk et al., 2008; Cooper and Owen, 2007; Mahoney and Roberts, 2007), intellectual capital development (Pedrini, 2007), human capital development (Subbarao and Zeghal, 1997; Ax and Marton, 2007) and even recently proposed aspects on accounting for human right (Sikka, 2011). Financial reporting recognition of health and safety has also been justified via, the legitimation strategy and changing perception under legitimacy theory arguments (Lindblom, 1994), while there have been statutes (Health and safety at work at 1974) stipulating the firms practice on health and safety issues (http://www.tim-russell.co.uk/upimages/Employment%20Guide.pdf, 2014).

Comparing the findings with previous studies, current results reveal that accounting and financial reporting recognition has considerably increased over the past periods and through out the period under study as well. In addition to the enhanced regulatory frameworks and compliance based on employment law and legal background on health and safety (GRI, 2006), this may have been a result of policy level proposals and research implications (DTI, 2003a &b; Roslender et al., 2004;

Roslender and Stevenson, 2009; ACCA, 2009). Moreover, the convergence of health and safety as a value creation factor under different frameworks: human capital accounting and reporting, intellectual capital management and reporting and sustainability reporting (Pedrini, 2007; Cuganesan, 2006; ACCA, 2009; GRI, 2006; DTI, 2003a & b) may have played a significant role in increasing recognition of employee health and safety in annual reports.

Even though human resource directors and human resource director committee functions and involvement, have been the least recognised item through financial reporting confirming some of the previous findings as well (Subbarao and Zeghal, 1997), the disclosure value has increased over the period under study. This increase may have reflected the significant influence of corporate governance mechanism on the voluntary financial disclosure reflecting human capital investment. In addition, UK firms recognition on value added strategy through financial reporting in annual reports is minimal in the current study as well as previous studies (Subbarao and Zeghal, 1997), implying that either it was difficult to determine or on the other hand, riskier or deemed unimportant to disclose the employee contribution in firms' strategy. However, previous empirical studies have revealed that firms from different geographical regions such as USA (Subbarao and Zeghal, 1997) have recognised it as an important item reflecting the firm value creation by the employees. Employee feature in current study has been identified as second least reported item, which remains fairly constant through out the period, while some of the previous studies have recognised it as a mostly reported item in their annual reports (Abeysekera and Guthrie, 2004; Abeysekera, 2008). This deviation may have significantly been attributable to the methodological changes as both the above studies collected data

using the frequency of occurrence or the size of disclosure, while the current study considered how representative employee featuring is (i.e. featuring only or combination of board of directors, top management, employees, employees in working environment and special achievement of employees) in recognising employees in firms' annual reports. Constant nature of the employee feature representation throughout the period must have been a result of firms following the same or similar format and outline in preparation of the annual reports altering only the essential components, which may even have had an indirect impact in establishing criterion to reflect firms' true investment in human capital.

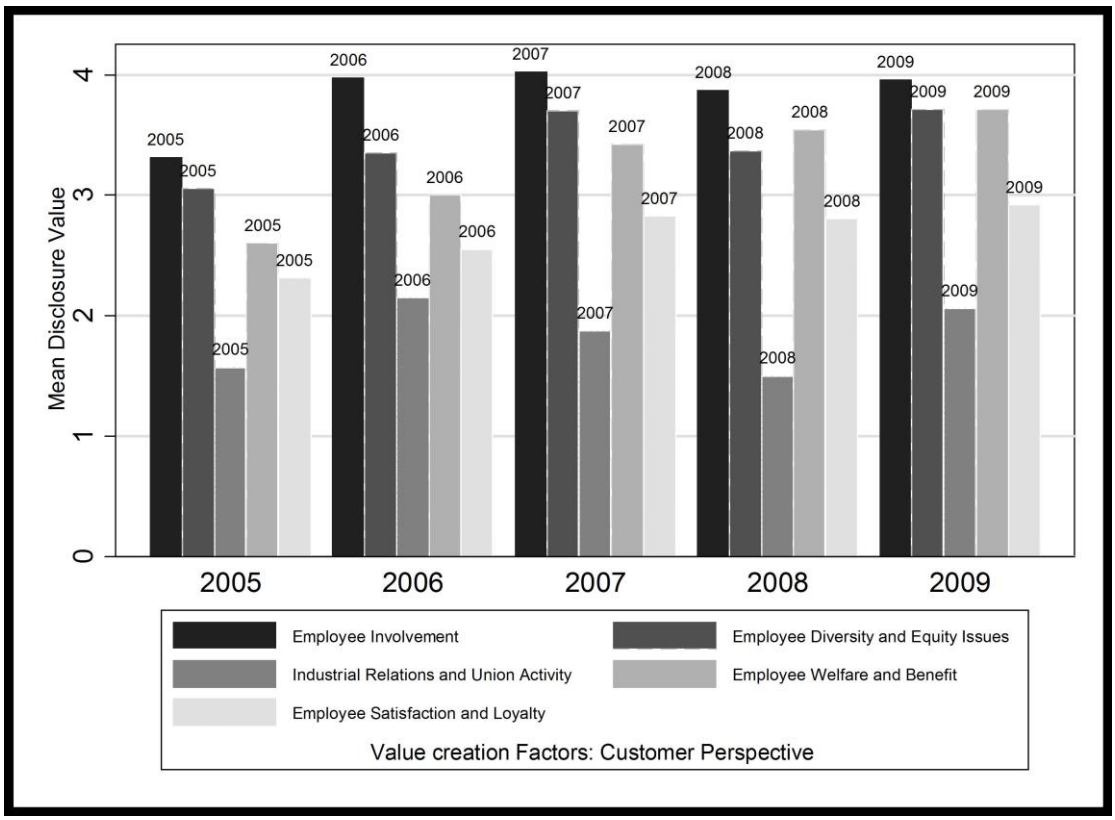
5.1.1.3 Customer perspective

According to the results of financial reporting recognition of the value creation factors categorised under customer perspective: employee involvement, diversity and equity, industrial relations and union activities, employee welfare and benefits, and employee satisfaction and loyalty, firm behaviour on human capital investment is analysed and illustrated (Figure 5.11).

Based on the results of descriptive analysis and the graphical presentation, employee involvement in decision-making including community related activities is recognised as mostly reported value creation factor followed by employee diversity and equity issues and employee welfare and benefits. Due to the overlapping nature of the attributes, issues related to disabled employment as well are categorised under employee diversity and equity related issues. However, the results have been

different for the accounting years 2007/2008 and 2008/2009, revealing that the most reported items are, employee involvement followed by employee welfare and benefits and then diversity and equity issues. This may have been a result of the financial reporting response to the enhanced legal frameworks (Disability Discrimination Act 2005; Employment Equality (Sexual Orientation) Regulations 2003, Employment Equality (religion or Belief) Regulations 2003, Fixed Term Employees (Prevention of Less Favorable Treatment) Regulations 2003, etc.) and corporate governance debates aiming for corporate citizenship behaviour which accompanied an attempt to justify firm performance to the external stakeholders based on conceptual justifications under theories such as stakeholder and political economy of accounting. On the other hand, opposed to some developing countries (Abeysekera, Guthrie, 2004 & 2005), disclosure on industrial relations and union activities and employee satisfaction and loyalty respectively have been recognised as the least reported value creation factors.

Figure 5.11: Mean disclosure score: Customer perspective



According to the human resource configurations by Lepak and Snell (1999), commitment based human resources management systems has the potential to support and create employment relationships to maximise firms reruns on human capital investment by nurturing employee involvement. Since commitment based human resource configurations encourage the use of potentials of employees such as cognitive abilities, aptitude etc., the extent of employee involvement in firm decision making to a certain extent determines the firms' investment in human capital and the return generated via this investment. Even though this study considers employee involvement in firm decision making in general as well as their involvement in wider community related activities most of the previous studies have paid more attention to the factor employee involvement in community activities (Li et al., 2012; Li et al.,

2008; Abeysekera, 2007; Abeysekera and Guthrie, 2004 and 2005). Apart from previous empirical evidence are being from different socio economic backgrounds, wider coverage in relation to the employee involvement may have been a reason for results of the current study to overwrite the previous empirical evidence (Abeysekera, 2007; Abeysekera and Guthrie, 2004 and 2005), by identifying employee involvement as the most recognised item in financial reporting through annual reports, compared to not so significant states in the previous studies. Since employee involvement in firm decision making have proven reflecting firms investment in human capital creating more future returns, accounting for people task force (DTI, 2003a & b) as well has recognised it as an item to be considered under human capital accounting.

Disclosure on employee diversity and equity issues has been identified as the second most recognised value creation factor under customer perspective. In comparing the findings with previous evidence and the policy papers, findings have confirmed the results of ACCA (2009) as well in which case, diversity and equity issues are recognised as a mostly disclosed item in voluntary disclosure sections of the annual reports. Though it's not the most widely reported item, in an international comparison of human capital between UK, USA, Canada, Germany, Japan and South Korea, diversity has considerably reported under financial reporting practice especially in the developed countries (Subbarao and Zeghal, 1997), in which case employment equity and disability related issues have been prominent while board diversity was recognised as least reported. Further explaining this, researchers have claimed that globalization of trade and industry, demanding more skilled and professional workers in knowledge-based and capital-based industries in developed

countries and increasing migration of skilled workers from developing to developed countries have made the firms in developed countries highly diversified and these firms have recognised and acknowledged the competitive advantage they gain through this in corporate financial reporting as well. Reflecting this, results have evidenced deviation in different social economic backgrounds especially from developing country point of view, where attributes contribution to diversity such as, equity issues related to race, gender, religion, and disability have been recognised as least reported (Abeysekera and Guthrie, 2004; Abeysekera, 2008).

Despite the variation in empirical evidence, financial reporting recognition on diversity and equity issues have been identified as important factors under a wide range of frameworks such as corporate social responsibility (Mahoney and Roberts, 2007; Pedrini, 2007), intellectual capital development (Li et al., 2008; Abeysekera and Guthrie, 2004 and 2005; Li et al., 2012; Cuganesan, 2006) and human capital investment (Abeysekera, 2008; DTI, 2003a & b) due to the increasingly successful role it plays in amalgamating formal skills and other factors such as imagination, creativity etc. (Turner, 2005). Moreover, most of the leading employers have actively been promoting diversity and equal opportunity through coordinated programmes of recruitment, development, promotion, fair pay reviews and flexible working (DTI, 2003a & b; GRI, 2006). Increasing accounting and financial reporting recognition of diversity and equity issues as well has been identified as a result of legitimisation of the firm practice (Lindblom, 1994). Moreover, in addition to the common law governing the contract of employment, dramatic growth in the amount of UK employment protection legislations related to diversity and equity issues such as Equal Pay Act 1970, Sex Discrimination Act 1975, Race Relations Act 1976,

Disability Discrimination Act 1995 and 2005, Employment Rights Act 1996, Human Rights Act 1998, Disability Discrimination Act 2005 and secondary legislations including Employment Equality (Sexual Orientation) Regulations 2003, Employment Equality (religion or Belief) Regulations 2003, Fixed Term Employees (Prevention of Less Favorable Treatment) Regulations 2003 as well may have had a considerable impact on financial reporting recognition of diversity and equity related issues (http://www.tim-russell.co.uk/upimages/Employment%20Guide.pdf, 2014).

Employee welfare and benefit has separately been identified as a value creation factor helping improve, the way firm appears to its internal and external customers. Deviating from some of the previous studies (Abeysekera, 2007; Abeysekera and Guthrie, 2005), the current study excluded financial benefits such as employee compensation as they have been reflecting the financial implications on the practice human capital investment, and hence separately categorised under financial perspective. According to the results and graphical illustration (figure 5.11), even though the level of recognition through financial reporting is lower compared to employee involvement and diversity and equity, it has gradually been increased over the period under consideration.

This may have been a result of reasons such as tension between managers and employees, increasing trend for outsourcing and contract employment, performance based pay and conflicting demands from different internal and external stakeholders (Steen et al., 2011). However, reflecting the recent enhancement in the corporate reporting in general, financial reporting recognition of employee welfare and benefit has particularly been higher in 2008 and 2009 accounting years. Moreover, the

recent increasing trend might as well have been attributable to the convergence between different reporting frameworks such as corporate social responsibility (Mills, and Gardner, 1984) and intellectual capital disclosure (Abeysekera, 2007; Abeysekera and Guthrie, 2005). In explaining the deviation in practice, some researchers (Abeysekera, 2008) have revealed that firms take initiative in some welfare and benefit related activities such as funded meals, holidays etc. to motivate employees and to increase human capital accumulation in firms. On the other hand, firms let employees take initiative on welfare activities such societal activities, sports clubs etc., that have less impact on capital accumulation.

Disclosure on industrial relations and union activities have been the least reported value creation factor, have evidenced a dropped particularly in the 2006/2007 and 2007/2008 accounting years too. The results have confirmed previous empirical findings for UK context where union activities was a least recognised item among human capital disclosure (ACCA, 2009) and even least reported in the UK comparative to Canada and USA, where the item was one of the most recognised in international comparative studies (Subbarao and Zeghal, 1997). However, the practice industrial relations have been regulated according to the special statutes: Trade Union and Labour Relations (Consolidation) Act 1992 and Employment Relations Act 1999 and 2004, while the financial reporting recognition has been considered under variety of frameworks including corporate social responsibility (Mahoney and Roberts, 2007; Clement, 2005), intellectual capital (Abeysekera, 2007) and human capital (DTI, 2003 a; Abeysekera, 2008). The least reporting trend in terms of financial reporting recognition could have been attributable to the recent employment policies promoting contract or performance pay employees particularly

the increase in zero hour contracts providing employees with less opportunities for employee relation and union activities.

On the other hand, the results might have been a reflection of actual situation, where there is nothing significant to disclose or the reluctance for negative disclosure leading to a bad impression on firms human capital base, due to the voluntary nature of the practice. Moreover, this confirms the fact that firms tend to use simple indicators measuring a variety of human capital attributes, while reporting only on those reliable consistent and most importantly the ones becoming key in reflecting corporate performance and organisational success (Roslender et al., 2004). The results have deviated from most recent studies covering UK (Li et al., 2008), where employee relations have been among the most recognised items of human capital disclosure and studies covering countries from other socio economic backgrounds such as Sri Lanka (Abeysekera, 2007 & 2008; Abeysekera and Guthrie, 2005). Abeysekera (2008) revealed the reason for higher recognition on employees as a way of avoiding early termination as it may lead to tension between firms and the community seeking for greater public accountability of their action. Thus practicing and recognising more on employee relations have been adopted as a way of promoting organisational citizenship behaviour as well.

Employee satisfaction and loyalty is identified as second least recognised value creation factor under financial reporting recognition and the disclosure level has gradually been increasing over the period under consideration. The results have confirmed previous empirical findings as well revealing that satisfaction and loyalty has long been a least recognised item under intellectual capital and human capital

reporting of the firms (Boedker et al., 2004) due to the reasons, either they don't have actual measure in place as indicators for satisfaction or those that do actually have indicators, rarely report them externally (Roslender et al., 2004). However, considering the theory of human capital investment, the fact that items such as employee satisfaction and loyalty being least recognised leaves the firms' states on the practice at a questionable stage. As an example, human capital investment argument opposed to the human resource expenditure seeks for long term benefit of firms' investment in employees through capturing the service potential of employees (Lev and Schewartz, 1971; Lev, 2001), which belongs rather to voluntarism and not determinism (Flamholtz, 1971), revealing that only satisfied and loyal employees would be treated as an investment. As a result employee satisfaction has been recognised as a vitally important indicator under human capital and intellectual capital management and investment of the firms (Holmen, 2005; DTI, 2003a & b; Williams, 2001; Cuganesan, 2006). However, the tension between employees and management, conflicting demands of different categories of internal and external stakeholders (Steen et al., 2011) and availability and the willingness to disclose the measurement indicators have had an adverse impact on the progress of practice in general.

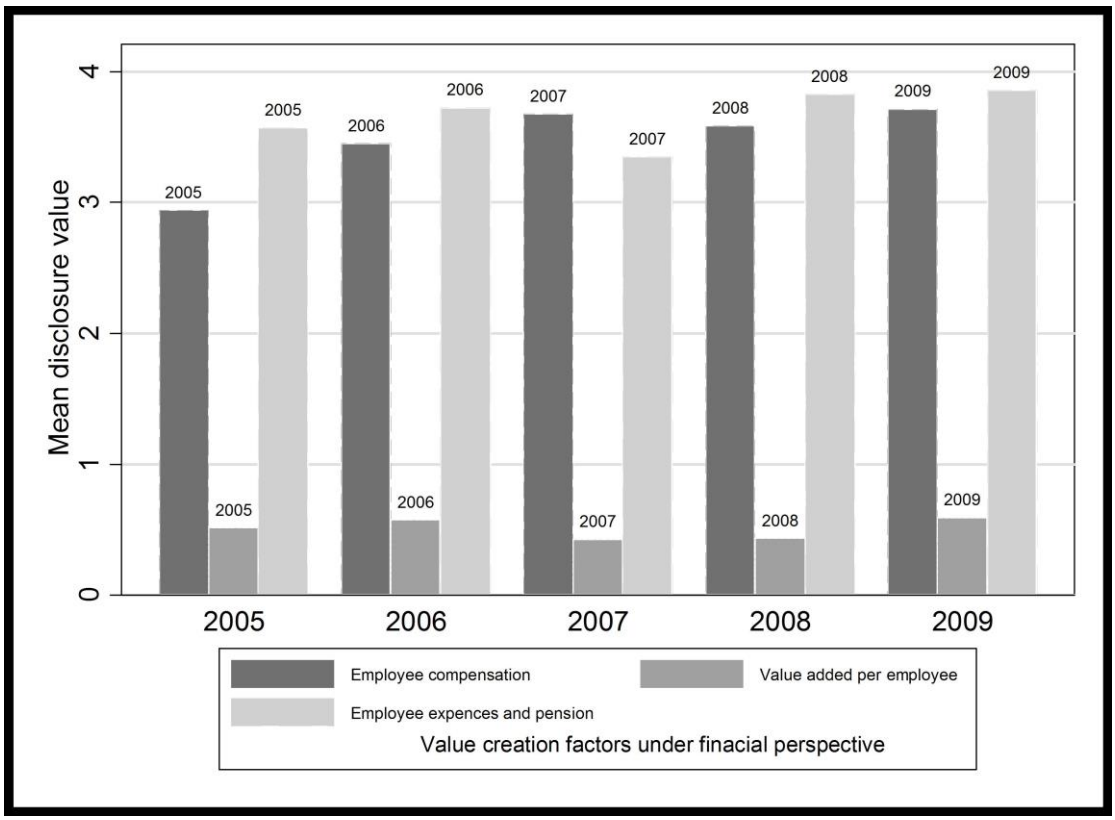
5.1.1.4 Financial perspective

From the financial perspective, employee compensation, including employee share schemes and share options schemes followed by employee expenses covering different aspects including functional cost, retirement benefit and pension etc. were

identified as the most recognised items in the annual reports (figure 5.12). Both these mostly recognised attributes attempting to reflect the employee involvement from expenditure perspective rather than treating it as an investment. However, the attribute directly reflecting the employee value creation of the firms: per employee value added contribution, recognised considering different perspectives such as firm value added per employee, revenue per employee, profit per employee was the least recognised item in the annual reports of the firms under study.

Considering the most widely reported items, employee compensation plans including employee share scheme and employee share option scheme and employee expenses and pension, results have confirmed the previous findings as these two items in many instances have evidenced as widely recognised under financial reporting via annual reports from UK and other developed countries (Subbarao and Zeghal, 1997; Li et al., 2008) as well as from developing country point of view (Abeysekera and Guthrie, 2004 & 2005; Abeysekera, 2007 & 2008). Accounting and financial reporting recognition of firms' investment on both the above can be explained as an attempt to develop increased employee satisfaction and enhance loyalty highlighting the financial benefits employees receive from the firms. Employee share scheme and employee share option schemes particularly serves a boundary-spanning role in terms of their relationship with the firm. As an example, by making employees shareholders of the firm and recognising this fact via financial reporting, provide them the sense of ownership, which help facilitate in aligning the firms objectives with those of employees.

Figure 5.12: Mean disclosure score: Financial perspective



From human capital investment perspective, employee contribution reflected via value added per employees, revenue per employees and profit per employees, which were least recognised through financial reporting would have been rather useful mostly for the external stakeholders of the firms (Huselid, 1995). Out of the three financial perspectives related measurements reflecting firm value creation by employees, value added contribution by employees has theoretically been identified as a better measure reflecting the financial implications of human capital investment. According to Sveiby (1997), turnover is generally influenced by items such as commissions or items just pass through the firms such as cost of good and services without contributing much in terms of firm value creation. On the other hand, profit is relatively easy to manipulate in private limited firms by means such as salaries,

fringe benefits, pension and insurance premium etc., making value added per employee, the least sensitive to all of the above. However, despite the decision usefulness value added per employee is having in reflecting the financial implications of human capital investment, for internal and external stakeholders, this still has been the least recognised item in annual reports in UK firms. This drawback seriously questions the current financial reporting recognition of human capital investment by UK firms.

Results of the current study, the least recognition of employee contribution in firm value addition, measured as value added per employee has confirmed previous empirical evidence, where UK annual reports disclosed none in terms of value added statement of the firms (Subbarao and Zeghal, 1997). However, it has been included in the research frameworks continuously as a significant item reflecting the firm value creation via employees. Researchers have explained the reasons for non-recognition as unavailability of measures, complexity in calculation of value added contribution or firms treating it as unimportant item to be disclosed. On the other hand, covering 2004-2005 accounting years, Li et al. (2008) revealed that employee productivity measured in terms of output per employee has considerably been recognised in the annual reports of UK firms. Since firm value added is identified as a better measure reflecting firms' overall performance (Sveiby, 1997), the same has been considered as the basis for quantification of intellectual capital investment using value added intellectual coefficient (VAIC) by Pulic (1998 & 2000). which has widely been used in most of the subsequent explanatory studies, in understanding the determinants and consequence of firms' intellectual capital investment (Chen et al., 2005; Nazari and Herremans, 2007; Tan et al., 2008).

Though descriptive analysis and interpretation of the results have broadly focused on understanding and explaining the variation in human capital investment by firms using individual human capital value creation factors, stakeholders in their decision-making tend to look further at the overall human capital value creation process using the disclosure recognised in the annual reports. As a result, researchers studying the value relevance of the practices either voluntary disclosure in general (Barako et al., 2006) or specific aspects such as corporate social responsibility (Abbott and Monsen, 1979), intellectual capital development (Abdolmohammadi, 2005; Abeysekera,, 2007; Abeysekera, and Guthrie, 2005) or human capital investment (Abhayawansa and Abeysekera, 2008; Abeysekera, 2008; Becker et al., 2001; Boedker, et al., 2004) in particular, have mostly developed disclosure indices as a part of conceptualisation. Adopting a similar approach, the variance observed in terms of the overall human capital disclosure indices, reflecting the firm value creation by employees are further analysed by explanatory means to understand the reasoning behind and consequences considering the variability exist in both forward and the backward directions.

5.1 CONCLUSIONS

> "Employees can be treated as assets when firms are dependant on people for their knowledge, however employees can be treated as labour when firms are dependant on technological systems that hold the codified knowledge of employees"
>
> (Abeysekera, 2007, p. 336).

The above quoted statement implies that, employees becoming an asset or labour depends on the firms' knowledge and human resource management practice. Efficient communication of, how this process is undertaken, turns out to be useful piece of information to firms internal and external stakeholders, either to manage human resources effectively and efficiently or to evaluate management as a part of decision making for the other stakeholders of the firms. Against this background, accounting and financial reporting recognition of firms' investment in human capital helps determine, whether firms treat employees as asset or an investment.

Considering the only parameters reflected via the formal accounting mechanism, human capital expenditure and the human capital per value added, firms spending on employees have increased over the study period particularly for banking and finance sector implying that firms keep investing on employees despite the adverse economic condition and financial crisis. However, linking it with the other employment related aspects such as number of employees and per employee human resources expenditure, revealed that per employee portion of human resource expenditure for banking and financial firms has dropped. This imply the fact that human resources budget is relatively more susceptible to the adverse economic conditions and has easily been subjected to trimming down, leaving the general question, whether firms perceive spending on employees as an asset or just an expenditure. On this background, appropriate recognition of employee status under accounting and financial reporting scenario has rather become a plea over long period of time.

The situation of firms belonging to non banking and financial industry has revealed a different picture implying that per employee expenditure and even other value creation indicators have revealed comparatively positive implications over banking and financial sector implying that non banking and financial firms perceived the employees as investment in human capital opposed to banking and financial sector. However, in order to confirm the implications of the descriptive statistical analysis it is essential to expand the study to an inferential level.

Despite accounting for human capital having held the continuous attention of researchers all over the world, providing policy studies, theoretical and empirical evidence from developed and developed countries (DTI, 2003a & b; Subbarao and Zeghal, 1997; Abeysekara, 2008 & 2007; Li et al., 2008 & 2012; Turner, 1996 & 2005; Lev and Schwartz, 1971, Flamholtz, 1971, 1972a, b & c, 1974; Roslender, 1997, 2009; Roslender et al., 2004; Roslender and Stevenson, 2009), nothing much in terms of the accounting treatment or professional attempts to promote accounting treatment has happened over more than half a century (Turner, 2005). Some researchers have even claimed this as a result of the "negative attitude and lack of commitment from the accounting profession" (Stittle, 2004 p. 311), making practitioners move towards disclosing more soft accounting information instead of hard accounting figures. The descriptive analysis of particularly the financial reporting recognition of human capital information via disclosure revealed a significant variance in the practice and the results have deviated significantly over time, firms, value creation factors identified, human capital disclosure categories defined etc.. It is evidenced that the practice has improved over the period of time for different aspects, even though it still has not reached the optimistic level considering

the decision usefulness and the cost benefit analysis involved in accounting and financial reporting recognition in firms investment in human capital. Moreover, even though the impact of individual value creation factors could be understood, explained and justified via descriptive means, understanding overall practice via disclosure indices developed, combining different sets as categorical indices or all of them as overall human capital disclosure index require a robust statistical analysis to understand and explain the overall practice.

Moreover, though there are visible or obvious relationships between human capital management, development and investment, social capital investment, and emotional intelligence with organisational productivity, it has been difficult to create a measurement instrument that can show the contribution of each (Brooks and Nafukho, 2006). Therefore, firms' investment in human capital conceptualised via accounting and financial reporting recognition analysed descriptively in this chapter is linked with possible determinants and the consequences of the practice in order to understand, how the practice could be enhanced to make the information produced more value relevance to the stakeholders. Thus, the descriptive analysis in this chapter is followed by hypotheses testing and inferential analysis following the statistical model proposed in the methodology chapter and elaborated further to reflect the causative relationship of accounting and financial reporting recognition of investment in human capital, with the determinants and the consequences of the practice.

CHAPTER SIX

DATA ANALYSIS

DETERMINANTS AND CONSEQUENCES OF FIRMS' INVESTMENT IN HUMAN CAPITAL

6.1 INTRODUCTION

The main motive of the study is to understand, explain and evaluate firms' practice of accounting and financial reporting recognition of human capital investment. Therefore, for a better understanding of the practice, accounting and financial reporting recognition of firms' investment in human capital conceptualised as human resource expenditure and portion of human capital per value added, measures extracted from the financial statements and human capital disclosure, ascertained via voluntary information disclosed in annual reports under corporate financial reporting are presented and descriptively analysed in the previous chapter. In order to achieve the second research objective of "understanding the determinants and the consequences expected of investment in human capital by listed firms, as reflected via accounting and financial reporting recognition of this investment conceptualised using human resource expenditure parameters and voluntary disclosure of human capital information in firms' annual reports", the analysis is expanded to an explanatory type using hypotheses testing based on the statistical model developed in the methodology chapter. Before hypotheses testing and inferential analyses, data are

subjected to diagnostic tests for the assumptions of the selected inferential statistical analysis techniques and data quality issues (Gujarati, 2004) and results are presented comparatively showing the improvements of the sample statistics. Inferential analysis is conducted in two different stages, capturing variability recognised in terms of accounting and financial reporting recognition of human capital investment in backward (i.e. the determinants of the practice) the and forward (i.e. consequences expected of the practice) directions. Ordinary Least Square regression technique with panel setting (Baltagi, 2005) is used as the statistical analysis technique. Results of both these analysis have then been interpreted and discussed in light of the previous empirical findings to draw the conclusions.

6.2 DATA DIAGNOSIS

Descriptive analysis conducted in previous chapter is extended further for data diagnosis in this chapter, to test for the model suitability and the validity in using data collected under each variable as independent and dependant variables in the models designed for hypotheses testing (Gujarati, 2004; Hair et al., 2010). Moreover, data diagnostic tests are particularly aimed at addressing issues related to the assumptions under multivariate analysis, particularly the Ordinary Least Square regression including, normality, autocorrelation, multicollinearity and heteroscedasticity (Hair et al., 2010). As a part of data diagnosis and model suitability correlation matrix covering independent and dependant variables as well was produced and presented in this chapter. The result for the descriptive statistical

analysis and data diagnostic tests for all the variables used in the hypotheses testing is given in the table 6.01 with mean, standard deviation 50th percentile, Skewness and the Kurtosis.

Table 6.01: Results of the descriptive data analysis

Variable	Mean	Std deviation	Median	Skewness	Kurtosis
Firm size	27954.4	29199.92	16920.04	1.994	6.272
Industry type: regulation	.243	.430	0	1.199	2.438
Industry type: intellectual capital intensity	.533	.500	1	-.134	1.018
Board size	12.981	2.575	13	.442	3.602
Audit committee size	4.510	1.090	4	.553	2.997
Nomination committee size	5.410	1.984	5	.672	2.597
Remuneration committee size	4.563	1.102	5	.363	2.776
Board composition/ independence	.707	.099	.714	-.111	2.405
Audit committee meetings	5.819	2.419	5	1.328	4.406
Remuneration committee meetings	5.596	2.207	5	1.011	4.436
Nomination committee meetings	3.743	2.227	3	1.353	6.188
Current year leverage	9.445	21.414	2.460	3.801	37.121
Current year profitability (ROE)	34.011	55.736	27.22	8.872	108.952
Current year liquidity	.865	.680	.76	4.250	30.663
HC expenditure	2852.09	2659.69	1852	1.480	5.025
HCVA	.520	1.672	.349	13.847	197.577
Stock return	20.719	56.834	14.022	3.653	25.847
Current year ROA	9.328	8.397	8.22	.582	3.051
Next year ROA	9.107	8.795	7.735	.832	4.058
Employee productivity	.079	.268	.032	8.774	89.387
Total Human Capital Disclosure Index	.575	.143	.574	-.216	2.513
Disclosure Index; Financial Perspective	.513	.204	.533	-.425	2.601
Disclosure Index; Customer Perspective	.606	.185	.64	-.631	2.727
Disclosure Index; Internal Business Process Perspective	.593	.136	.6	-.1670	3.036
Disclosure Index; Learning and Growth Perspective	.561	.206	.543	-.102	2.330

According to the results (table 6.01), skewness and kurtosis values for some of the variables, accounted beyond threshold (1 > Skewness > -1 and Kurtosis close to 3), questioning the validity of the result, if they are to be used directly for the inferential

models (Gujarati, 2004; Hair et al., 2010). As a remedy, where ever possible, variables with considerably different values compared to the threshold level of Skewness and Kurtosis, including firm size, human capital expenditure, leverage, profitability and liquidity were either, transformed using the best possible mechanism to enhance the property of normal distribution or, subjected to winsorization to minimise the effect of the presence of outliers on sample estimates since it enhance the property of normal distribution of these variables (Hair et al., 2010; Watson, 1990). Presence of multivariate outliers and the differing substantially from multivariate normality particularly was an issue in financial and accounting ratios (Watson, 1990). Moreover, data transformation aiming the normal distribution of the variables under model addresses the issue of linearity and heteroscedasticity as well (Hair et al., 2010).

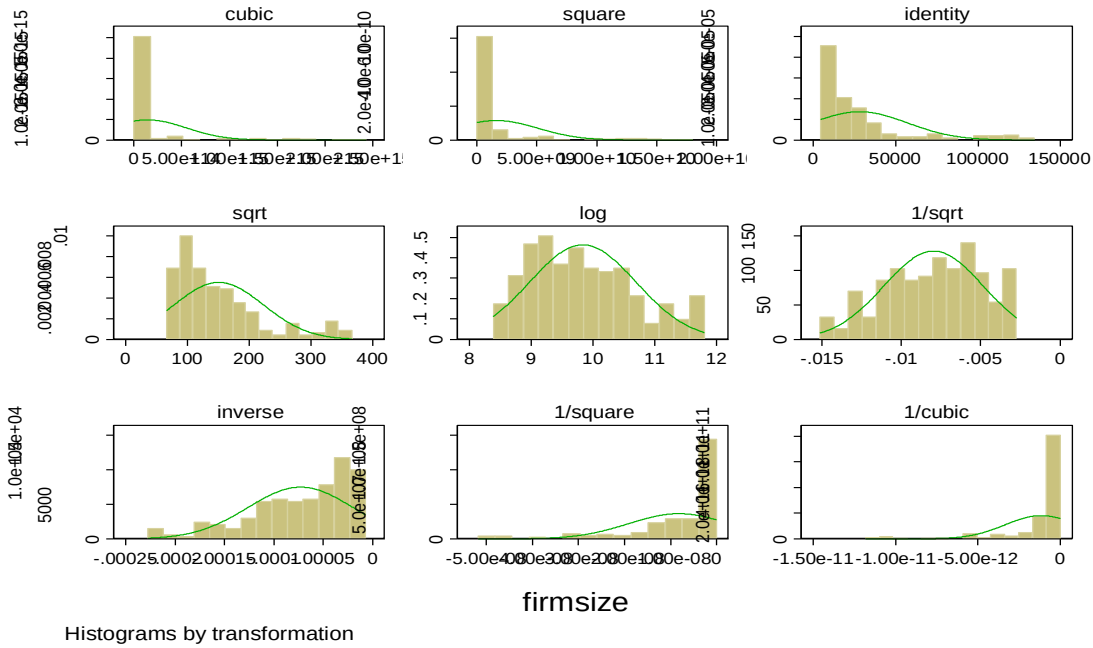
The sample accounted for firms with mean market capitalization of £Mn 27954 with a standard deviation of £29199.92 with a marginal positively skewed distribution. In order to avoid the problem relating to the normal distribution of the data set the natural log of the market capitalisation was considered for the regression analysis (Li et al., 2012; Ntim et al., 2012). This transformation technique was decided based on the results of ladder of powers test, in which case the histogram is given in the figure 6.01 below to highlight how each transformation technique has affected data distribution. Accordingly, the natural log of firm size was selected for the inferential analysis since it’s the most suitable transformation technique satisfying the assumption of normal distribution of data. A similar method is applied for all the variables to minimise the data quality issues on the results though elimination would have been impossible. Therefore, the extent to which the transformed data have

improved the sample statistics (especially skewness and kurtosis) is highlighted comparatively in table 6.02 with the original variables.

Table 6.02: Comparison of descriptive statistics for original and transformed variables

Variable	Skewness	Kurtosis
Firm size	1.994	6.272
Firm size log	**.495**	**2.477**
Audit committee meetings	1.328	4.406
Inverse of audit meeting	**.208**	**2.438**
Remuneration committee meetings	1.011	4.436
Square root of rem com meeting	**.382**	**3.394**
Nomination committee meetings	1.353	6.188
Log Nomination committee meetings	**-.298**	**2.536**
Current year leverage	3.801	37.121
Current year leverage (winsorized)	**1.785**	**6.711**
Current year profitability (ROE)	8.872	108.952
Current year profitability ROE (winsorized)	**.038**	**7.113**
Current year liquidity	4.250	30.663
Current year liquidity (winsorized)	**2.662**	**13.900**
HC expenditure	1.480	5.025
Square root HC expenditure	**.619**	**2.739**
HCVA	13.815	196.326
HCVA (winsorized)	**1.668**	**7.571**
Stock return	3.653	25.847
Stock return (winsorized)	**2.068**	**10.714**
Employee productivity	8.774	89.387
Employee productivity (winsorized)	**3.033**	**13.570**

Figure 6.01: Ladder of powers histogram for firm size



The sample normally distributed with the given mean and standard deviation for rest of the variables: board size (12.98095, 2.575114), Audit committee size (4.509524, 1.090369), Nomination committee size (5.409524, 1.984125), remuneration committee size (4.5625, 1.101574). Board composition or the independence measured as the portion of non-executive directors to total number of directors has reflected a normal distribution with (.7069742, .0987613) reflecting the higher portion of non-executive directors. However, considering the true independence nature of the directors after considering all the interests and relationships directors exercise over the firm operation would have generated better results in future studies as this information could be generated from the current annual reports produced after the introduction of the UK corporate governance code (FRC, 2010).

The number of meetings held by each committee revealed a marginal positive skewness with mean and standard deviation for each: audit committee meetings (5.819048, 2.419146), nomination committee meetings (3.742857, 2.226541) and remuneration committee meetings (5.596154, 2.206793). The problem of high skewness and kurtosis is addressed again via data transformation techniques (Hair et al., 2010) determined based on the ladder of power for each variable considering the technique generating most normally distributed samples and these techniques include inverse (audit committee meetings), log (nomination committee meetings) and square root (remuneration committee meetings) (figure 6.02, figure 6.03 and figure 6.04). The extent to which, each of the above transformation techniques has improved the sample statistics (especially skewness and kurtosis) of each variable is highlighted comparatively in table 6.02 with the original statistics for each variable.

Figure 6.02: Ladder of Powers Histogram for Audit Committee Meeting

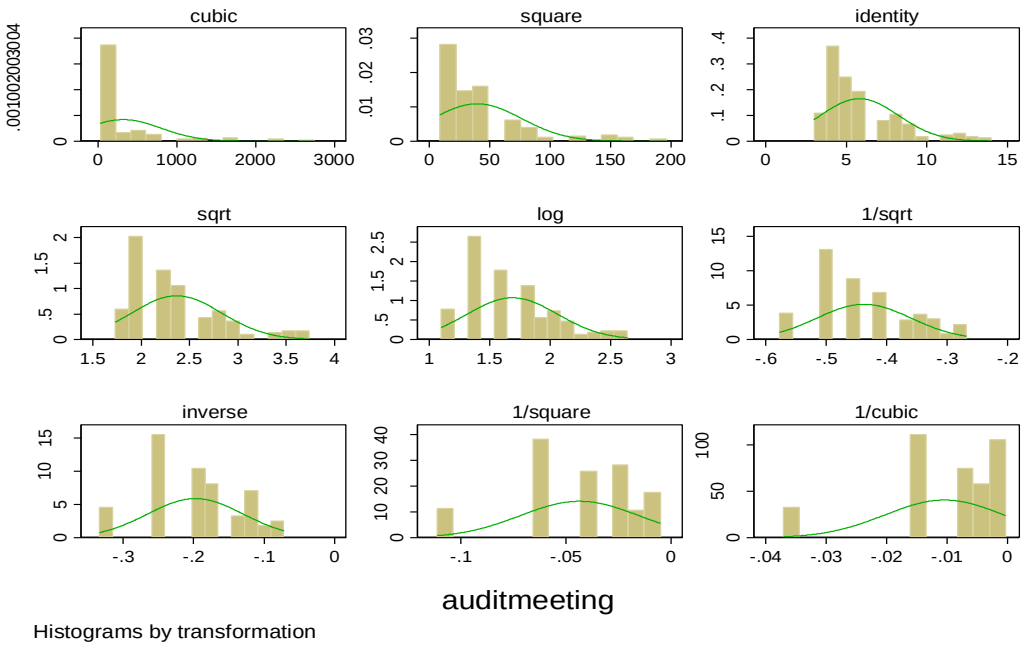


Figure 6.03: Ladder of Powers Histogram for Nomination Committee Meeting

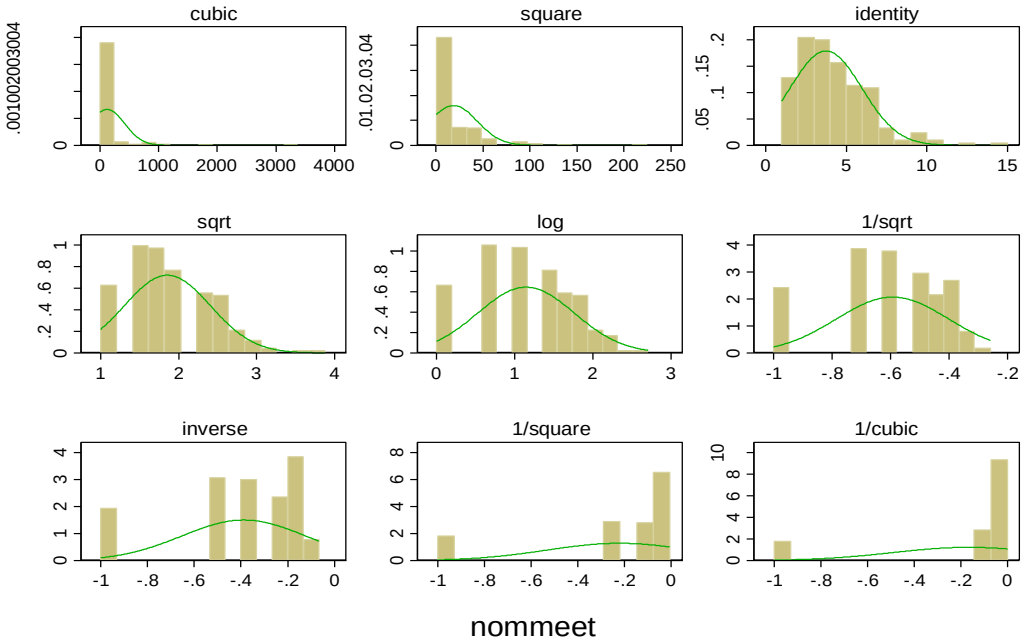
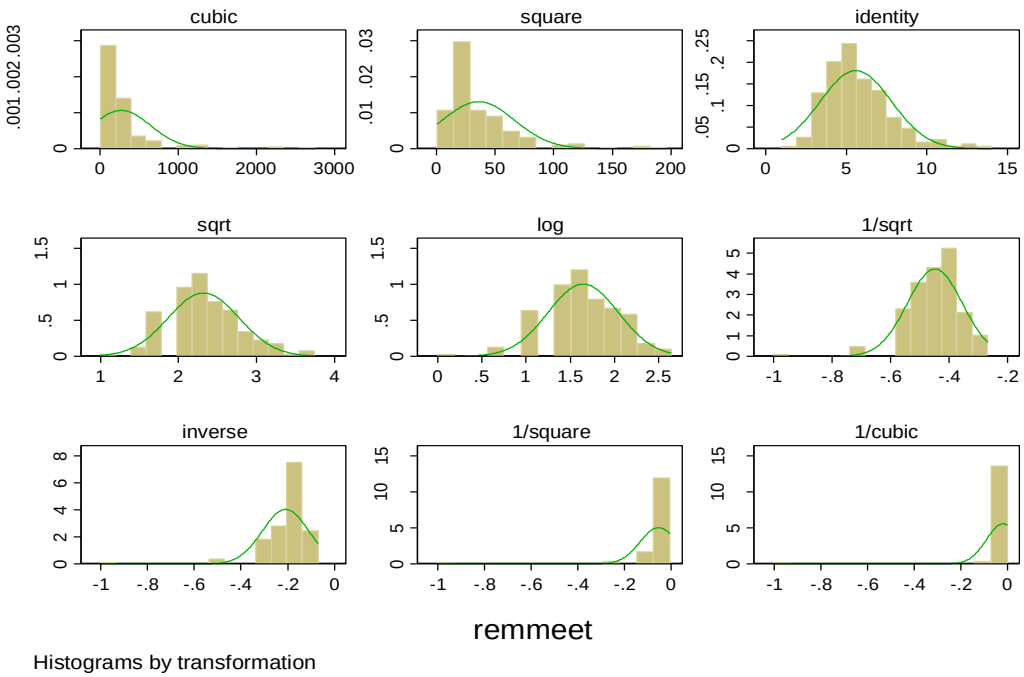


Figure 6.04: Ladder of Powers Histogram for Remuneration Committee Meeting



Variables chosen in the model: current year leverage, current year profitability measured as return on equity, current year liquidity and stock return, appeared not normally distributed as they show considerably different values compared to the threshold level of Skewness and Kurtosis. Revealing the inherent nature of financial ratios (Watson, 1990), this was recognised as a result of the presence of outliers in the sample. In order to eliminate the impact of the outlier effect, winsorization technique is applied to those variables, which considerably lowers the values of skewness and kurtosis as comparatively displayed in table 6.02. In addition, problem of autocorrelation between independent and dependant variables in the research model is ascertained using correlation matrices. Pearson and Spearman correlation matrices was produced for this purpose and the results confirmed that there are no any evidence of autocorrelation in between independent variables in the same model as values for correlation coefficient between independent variables in the models have always been considerably low compared to the threshold levels defined (less than 0.8) (Gujarati, 2004). The correlation matrices showing coefficient values are given in table 6.03 and table 6.04. Hence, there were no any restrictions in choosing them in the same regression model as independent variables for the analysis.

The descriptive analysis in the previous chapter highlighted the need for inferential analysis, while statistical analysis techniques and variables used based on research model has been assed and validated through data diagnostic tests and remedies illustrated above. Inferential analysis based on the hypotheses developed and the results are presented in the section below followed by a discussion of results in light of theoretical foundation and previous empirical evidence used in conceptualisation.

Table 6.03: Spearman Correlation Matrix for determinants of human capital investment

	Firm size	Industry type	Intellectual intensity	Leverage	Profitability	Liquidity	Board size	Board composition	Audit committee size	Audit committee meetings	Remuneration committee size	Remuneration committee meeting	Nomination committee size	Nomination committee meeting	Human capital expenditure	Human capital / value added	Human capital disclosure index
Firm size	1.0000																
Industry type	-0.0184	1.0000															
Intellectual intensity	-0.0286	0.5596*	1.0000														
Leverage	-0.1176	0.6977*	0.4840*	1.0000													
Profitability	0.2107*	-0.3124*	-0.1951*	-0.0475	1.0000												
Liquidity	0.0531	-0.0942	-0.0846	-0.1683*	0.1399*	1.0000											
Board size	0.4863*	0.2611*	0.2751*	0.1969*	-0.0634	-0.0225	1.0000										
Board composition	0.1730*	-0.1162	0.1119	-0.3469*	-0.0043	0.1381*	0.0013	1.0000									
Audit committee size	0.2249*	0.0543	0.0598	0.0123	0.0760	0.0943	0.2633*	0.1469*	1.0000								
Audit committee meetings	0.1974*	0.4086*	-0.2142*	0.2324*	-0.0592	0.1007	0.4402*	0.0877	0.2094*	1.0000							

Remuneration committee size	0.1134	0.0162	-0.0130	0.1012	0.0545	0.0246	0.0979	-0.1701*	0.5263*	0.0519	1.0000						
Remuneration committee meeting	0.0314	0.1390*	0.1000	0.1948*	-0.1182	-0.1321	0.2203*	-0.0997	0.0502	0.3640*	0.0567	1.0000					
Nomination committee size	-0.2364*	0.0067	-0.0229	0.1835*	-0.0721	-0.1679*	-0.0764	-0.1317	0.2260*	-0.2092*	0.3980*	0.0239	1.0000				
Nomination committee meeting	0.1259	0.0616	0.0623	0.1356	0.0799	0.0090	0.1283	0.0510	0.0500	0.3250*	-0.0375	0.2760*	-0.1358	1.0000			
Human capital expenditure	0.5192*	0.0888	0.2588*	0.1646*	-0.1013	-0.0028	0.4891*	0.0542	0.0495	0.3410*	-0.0448	0.2479*	-0.1384*	0.2651*	1.0000		
Human capital / value added	-0.3298*	-0.2347*	0.1167	0.0078	-0.2717*	-0.0987	-0.1909*	-0.0446	-0.1427*	-0.1220	-0.0529	0.1958*	0.2531*	0.0167	0.2824*	1.0000	
Human capital disclosure index	-0.0710	-0.1199	0.0255	-0.0484	-0.0173	0.0778	0.0916	-0.1531*	-0.0168	0.0456	0.0047	0.1334	-0.0710	0.1092	0.1586*	0.1418*	1.0000

(*indicates that correlation coefficients are significant at 5 % level of significance)

Table 6.04: Pearson Correlation Matrix for determinants and consequence of human capital investment

	Firm size	Industry type	Intellectual intensity	Leverage	Profitability	Liquidity	Board size	Board composition	Audit committee size	Audit committee meetings	Remuneration committee size	Remuneration committee meeting	Nomination committee size	Nomination committee meeting	Human capital expenditure	Human capital / value added	Human capital disclosure index
Firm size	1.0000																
Industry type	-0.0131	1.0000															
Intellectual intensity	-0.0603	0.5246*	1.0000														
Leverage	-0.1026	0.6915*	0.3900*	1.0000													
Profitability	0.0871	-0.2911*	-0.1906*	-0.2510*	1.0000												
Liquidity	0.0028	-0.0406	-0.0456	-0.1320	0.0711	1.0000											
Board size	0.4528*	0.3196*	0.2728*	0.2232*	-0.0437	-0.0080	1.0000										
Board composition	0.0960	-0.1077	0.1460*	-0.1853*	0.0285	0.1024	0.0514	1.0000									
Audit committee size	0.1643*	0.0580	0.0314	-0.0343	0.1441*	0.0995	0.1877*	0.1153	1.0000								
Audit committee meetings	0.2287*	0.3110*	0.0655	0.1392*	-0.0758	0.0118	0.3962*	0.0826	0.1619*	1.0000							
Remuneration committee size	0.0740	0.0336	-0.0317	0.0728	0.0606	0.0195	0.0142	-0.1625*	0.5774*	0.0707	1.0000						
Remuneration committee meeting	0.0101	0.1412*	0.0326	0.0679	-0.1432*	-0.1026	0.1495*	-0.1705*	0.0483	0.3273*	0.0409	1.0000					

Nomination committee size	0.3072*	-0.0272	-0.0726	0.0288	-0.0308	-0.0789	-0.1297	-0.2257*	0.2278*	-0.2459*	0.4295*	-0.0177	1.0000				
Nomination committee meeting	0.1311	-0.0111	-0.0201	-0.0537	0.0444	0.0048	0.0758	0.0369	0.0363	0.2292*	-0.0135	0.2301*	-0.1780*	1.0000			
Human capital expenditure	0.5271*	0.1096	0.2195*	0.0626	-0.0895	-0.0940	0.4456*	0.0422	0.0212	0.2829*	-0.0652	0.2020*	-0.1929*	0.2015*	1.0000		
Human capital / value added	-0.0542	0.0906	0.0718	0.1070	-0.2818*	-0.0573	-0.1392*	-0.0405	-0.1186	-0.0105	-0.1112	-0.0600	0.0382	0.0336	0.1493*	1.0000	
Human capital disclosure index	0.0454	-0.0817	0.0591	-0.0753	-0.0294	0.1070	0.1316	-0.1373	0.0170	0.0252	0.0229	0.2148*	-0.0186	0.2082*	0.2085*	-0.0668	1.0000

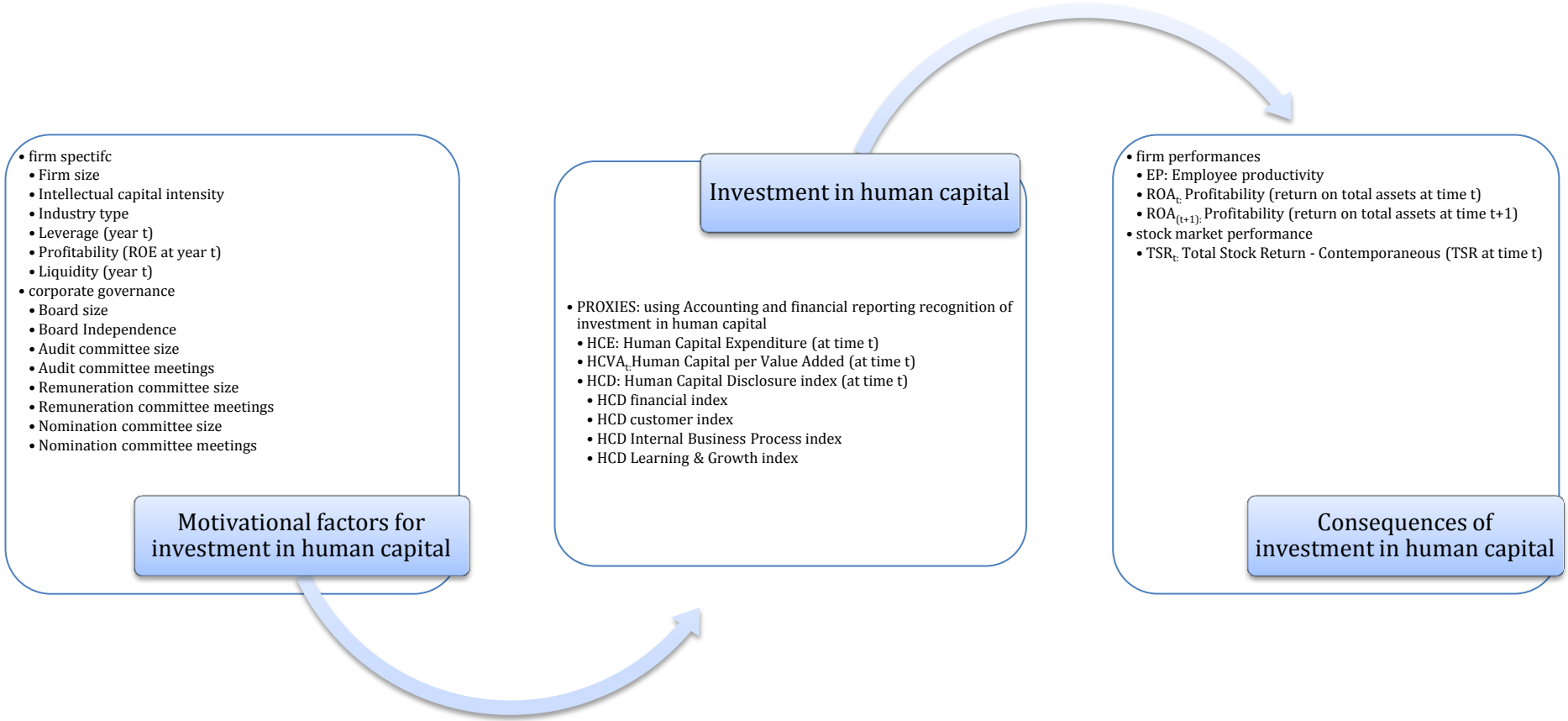
(*indicates that correlation coefficients are significant at 5 % level of significance)

6.3 HYPOTHESES TESTING

As the data set cover observations considering cross sections of firms listed in the FTSE 100 listing of London stock exchange covering a span of five accounting years on time series dimension, panel setting is applied for the regression instead incorporating year dummies as in previous studies (Barako et al., 2006). In panel setting, company number is used as the panel variable while the accounting year is considered as the time variable in a way that it eliminates the effect of unobserved firm level heterogeneity (Mendez et al., 2011; Abeysekara, 2011; Mahoney and Roberts, 2007; Popov, 2013). The panel is said to be an un balanced panel, since every single company did not have observations for the complete time duration. However, the sample considered for the panel data analysis made sure that every company cover data for at least two accounting years, thus company observation for only one accounting year was excluded from the sample in order to fulfil the panel setting criterion (Baltagi, 2005).

Research hypotheses developed, under the second research objective aiming to understand the determinants and the consequences of investment in human capital conceptualised based on financial reporting recognition of this investment, as hypothesised in the methodology chapter based on conceptual framework expanded in figure 6.05, are tested for statistical inference. The results of the analysis and the discussion are given below under two main sections: determinants and the consequences of human capital investment.

Figure 6.05: Extended conceptual framework of the study



6.3.1 Determinants of firms investment in human capital

In estimating the determinants of firms investment in human capital, due to the absence of a standard mechanism or an appropriate practice measuring this investment, accounting and financial reporting recognition of firms' human capital investment in is used to conceptualise the firms' investment in employees. Therefore, the three variables, Human capital expenditure (HCE), Human capital per value added and (HCVA) and Human capital disclosure (HCD) have been simultaneously tested and comparatively interpreted as proxies for firms investment in human capital. The potential human capital investment determinants derived considering theoretical backgrounds and the empirical findings such as firm size, intellectual capital intensity, industry type, current year leverage, current year profitability measured in terms of the return on equity, current year liquidity, board size, board composition, audit committee size, number of audit committee meetings, remuneration committee size, number of remuneration committee meeting, nomination committee size and number of nomination committee meetings, are tested as potential determinants of human capital investment of the firms listed in FTSE 100 listing of London stock exchange.

Since the sample size for five years are not similar to each other due to the elimination of observations as a result of data unavailability, an un balanced panel regression is used with both fixed effect and the random effect estimators, while Hausman test is applied to determine the model suitability in better explaining the variance of the model (Hausman, 1978). Since pooled linear regression could be

used as an alternative analysis with more relaxed assumptions, in situations where both fixed effect and random effect estimator models are unable to explain the model variance, the results of the pooled linear regression is used and the same is used comparatively as a part of sensitivity analysis in interpretation of the results. Moreover, the use of pooled linear regression comparative to the panel data analysis with fixed and random effect estimators allows the opportunity to consider observations independently despite the panel nature, in which similar group of firms have repeated in the subsequent accounting years.

6.3.1.1 Model suitability

The regression model selection for panel data analysis is started with applying fixed effect estimator and the random effect estimator for all three models for determinants of human capital investment of the firms conceptualised as human capital expenditure (HCE), Human capital per value added (HCVA) and human capital disclosure index (HCD).

Both fixed effect and the random effect estimator models were significant for the determinants of Human capital expenditure analysis (fixed effect model prob > F = 0.0042; model R square .1887 and for random effect model Prob > chi2 = 0.0000; model R square 0.3741), despite dummy variables reflecting the industry type and the high intellectual capital nature of the firms were omitted from the results of fixed effect models due to the time invariant nature of these two dummy variables.

According to the Hausman test results (Hausman, 1978), since there were no enough evidence to reject the null hypothesis of deference in coefficients are not systematic, it is concluded that fixed effect model is the most suited for understanding the determinants of human capital investment measured as human capital expenditure. The results for the analysis of determinants of human capital expenditure using panel data with fixed and random effect estimators, Hausman test comparing the coefficients of these tests and the results based on pooled linear regression as a part of sensitivity analysis is comparatively presented in the table 6.05.

Considering the conceptualisation of human capital investment via value added per human capital as well, both the fixed effect and random effect models were statistically significant (fixed effect model; prob > F = 0.0044; model R square .1745 and random effect model Prob > chi2 = 0.0000; model R square 0.4682). Based on the Hausman test statistics, comparing the fixed effect and the random effect estimators, since the null hypothesis of there is no systematic difference in between the coefficients under fixed and the random estimators, is rejected random effect model was selected as most suitable for capturing the variability in the model (Hausman, 1978). However, results for both these tests are illustrated comparative to the pooled linear regression test undertaken for the sensitivity analysis as well for further interpretation (Table 6.06).

Considering, human capital investment conceptualisation based on financial reporting recognition of voluntary human capital disclosure, according to the model statistics (fixed effect model; prob > F = 0.7461; model R square .0597 and random effect model Prob > chi2 = 0.6394; model R square 0.1995), neither the fixed effect

nor random effect models were statistically significant as model explaining the human capital disclosure. Though neither of the models was significant, according to the Hausman test statistics, panel regression with fixed effect estimator evidenced, as better explaining the model variability by rejecting the null hypothesis of difference in coefficients are not systematic. On the other hand, considering each observation independently irrespective of the panel setting, pooled linear regression model was applied and the results revealed that the model is significant with the statistics, Prob > F = 0.0000 and an R square of .1328. The model explanatory powers in general are revealed lower compared to the other two models, in which human capital investment is conceptualised based on human capital expenditure and the human capital per value added which are quantitative parameters opposed to the disclosure index. The results are illustrated in table 6.07 below.

The results in each table (table 6.05, table 6.06 and table 6.07) illustrate the coefficients and the Standard error of the coefficient (given within brackets) with the level of significance reflected for all the determinants hypothesised in the models, panel data with fixed and random effect estimators and the pooled linear regression. Moreover, the model statistics and the explanatory power under each as well, are revealed in the end using the statistical values for f-test, chi-square and the model R square values. The results for the better explaining analysis model for each conceptualisation mechanism, have later been simplified reflecting the sign of the coefficient, relationship with human capital investment are statistically significant or not and the level of significance when the variable is statistically significant. The results have presented comparative to the hypothesised directions in table 6.08, which has been expanded further in table 6.09 for summary statistics as well.

Table 6.05: Results for regression analyses: Determinants of human capital expenditure

Independent variables	Dependant variable: Square root of human capital expenditure		
	Fixed Effect	Random Effect	Pooled Linear Reg
Firm size	**0.920** **(4.1)**	10.320*** (3.768)	35.425*** (4.596)
Industry type: regulation	**Omitted**	-4.160 (7.510)	-13.832*** (4.111)
Intellectual capital intensity	**Omitted**	7.522 (6.297)	11.515*** (2.664)
Leverage (year t)	**-0.058** **(0.085)**	0.050708 (0.084)	.258* (.143)
Profitability (ROE at year t)	**-0.075***** **(0.022)**	-0.077*** (0.023)	-.117** (.052)
Liquidity (year t)	**1.352** **(1.535)**	0.370 (1.537)	-1.097 (1.829)
Board size	**-0.29** **(0.413)**	0.0839 (0.410)	1.341* (.706)
Board composition	**9.104** **(10.428)**	10.400 (10.264)	-16.577 (11.929)
Audit committee size	**-0.28** **(0.677)**	-0.3666 (0.699)	-1.876 (1.377)
Audit committee meetings (inverse)	**-29.886** **(20.768)**	-34.245* (19.802)	-57.512*** (19.181)
Remuneration committee size	**-1.097** **(0.809)**	-1.456* (0.814)	-3.299** (1.451)
Remuneration committee meetings	**2.032** **(1.584)**	2.695* (1.627)	4.416 (3.126)
Nomination committee size	**0.231** **(0.539)**	-0.058 (0.532)	.998 (.869)
Nomination committee meetings	**2.352**** **(1.055)**	2.774*** (1.087)	2.828 (1.758)
Intercept	**48.428**** **(21.316)**	-0.607 (19.833)	-93.324*** (23.317)
F	2.58		17.20
Prob >F	.0042		.000
Wald (Chi2)		41.44	
Prob > Chi2		.0002	
R square	.1887	0.3741	0.5460
rho	.933	.891	
Hausman test: Chi2	27.74		
Prob > Chi2	.0060		

(Note: *: p<0.10; **: p<0.05; ***: P<0.01 at two tailed)

Table 6.06: Results for regression analysis: Determinants of human capital per value added

Independent variables	Dependant variable: Human capital per value added		
	Fixed Effect	Random Effect	Pooled Linear Reg
Firm size	-0.043 (0.115)	**-0.070** **(0.062)**	-.074 (.0702)
Industry type: regulation	Omitted	**-0.232***** **(0.076)**	-.224*** (.053)
Intellectual capital intensity	Omitted	**0.135***** **(0.054)**	.142*** (.035)
Leverage (year t)	-0.001 (0.002)	**-0.001** **(0.002)**	-.0009 (.0019)
Profitability (ROE at year t)	-0.003*** (0.001)	**-0.003***** **(0.001)**	-.0027*** (.0009)
Liquidity (year t)	-0.011 (0.043)	**-0.011** **(0.032)**	-.002 (.021)
Board size	-0.023** (0.012)	**-0.015*** **(0.008)**	-.012 (.011)
Board composition	-0.203 (0.292)	**-0.235** **(0.200)**	-.238* (.139)
Audit committee size	0.005 (0.019)	**-0.006** **(0.017)**	-.014 (.016)
Audit committee meetings (inverse)	-0.137 (0.581)	**-0.288** **(0.346)**	-.338 (.277)
Remuneration committee size	-0.009 (0.023)	**-0.021** **(0.018)**	-.023 (.018
Remuneration committee meetings	0.0001 (0.044)	**0.044** **(0.037)**	.080* (.047)
Nomination committee size	0.021 (0.015)	**0.017** **(0.011)**	.020** (.009)
Nomination committee meetings	0.001 (0.030	**-0.0003** **(0.025)**	-.005 (.024)
Intercept	1.050* (0.596)	**1.133***** **(0.330)**	1.07*** (.342)
F	2.57		10.58
Prob >F	0.0044		.0000
Wald (Chi2)		61.73	
Prob > Chi2		0.0000	
R square	0.1880	.4682	.3441
rho	0.5171	.3694	
Hausman test: Chi2	6.20		
Prob > Chi2	.9057		

(Note: *: p<0.10; **: p<0.05; ***: P<0.01 at two tailed)

Table 6.07: Results for regression analysis: Determinants of human capital disclosure

Independent variables	Dependant variable: Human capital disclosure		
	Fixed Effect	Random Effect	Pooled Linear Reg
Firm size	.078 (.066)	-.0038 (.0421)	**-.030** **(.033)**
Industry type: regulation	Omitted	-.0861 (.0541)	**-.102***** **(.039)**
Intellectual capital intensity	Omitted	.0391 (.0403)	**.066***** **(.024)**
Leverage (year t)	.0009 (.0013)	.0001 (.0011)	**-.0006** **(.001)**
Profitability (ROE at year t)	.0002 (.0004)	.00008 (.0003)	**-.0003** **(.0004)**
Liquidity (year t)	.0049 (.0246)	.0271 (.0205)	**.048**** **(.020)**
Board size	.0049 (.0066)	.0058 (.0054)	**.010**** **(.004)**
Board composition	.0496 (.1672)	-.1406 (.1308)	**-.326***** **(.111)**
Audit committee size	-.0152 (.0109)	-.0125 (.0102)	**-.004** **(.013)**
Audit committee meetings (inverse)	.4108 (.3330)	-.0152 (.2325)	**-.176** **(.199)**
Remuneration committee size	-.0111 (.0130)	-.0059 (.0112)	**.0001** **(.013)**
Remuneration committee meetings	.0213 (.0254)	.0344 (.0231)	**.045*** **(.023)**
Nomination committee size	-.0027 (.0086)	.0002 (.0069)	**.0009** **(.0055)**
Nomination committee meetings	.0176 (.0169)	.0160 (.0157)	**.023** **(.015)**
Intercept	.1016 (.3418)	.5820*** (.2223)	**.691***** **(.184)**
F	.70		
Prob >F	.7461		
Wald (Chi2)		11.59	
Prob > Chi2		.6494	
R square	.0597	.1995	.1850
rho	.6713		
Hausman test: Chi2	19.02		
Prob > Chi2	.0880		

(Note: *: p<0.10; **: p<0.05; ***: P<0.01 at two tailed)

Table 6.08: Regression results significance and the hypothesised directions

Independent variable	Hypothesised directions	Model 1: HCE (sqrt) FE	Model 2:HCVA RE	Model 3:HCD PLR
Firm size	Positive	Positive insignificant	Negative Insignificant	Negative insignificant
Industry type: regulation	Positive	Omitted	Negative significant (.01)	Negative significant (.01)
Intellectual capital intensity	Positive	Omitted	Positive significant (.01)	Positive significant (.01
Leverage (year t)	Positive	Negative insignificant	Negative insignificant	Negative insignificant
Profitability (ROE at year t)	Positive	Negative significant (.01)	Negative significant (.01)	Negative insignificant
Liquidity (year t)	Positive	Positive insignificant	Negative insignificant	Positive significant (.05)
Board size	Positive	Negative insignificant	Negative significant (.10)	Positive significant (.05)
Board composition	Positive	Positive insignificant	Negative insignificant	Negative significant (.01)
Audit committee size	Positive	Negative insignificant	Negative insignificant	Negative insignificant
Audit committee meetings (inverse)	Positive	Positive insignificant	Positive insignificant	Positive insignificant
Remuneration committee size	Positive	Negative insignificant	Negative insignificant	Positive insignificant
Remuneration committee meetings	Positive	Positive insignificant	Positive insignificant	Positive significant (.10)
Nomination committee size	Positive	Positive insignificant	Positive insignificant	Positive insignificant
Nomination committee meetings	Positive	Positive significant (.05)	Negative insignificant	Positive insignificant

(Level of significance: at .01, .05 or .10)

Table 6.09: Regression results comparison for determinants with hypothesised directions

Independent variable	Hypothesised directions	Model 1: HCE (sqrt) FE	Model 2:HCVA RE	Model 3:HCD PLR
Firm size	Positive	**0.920 (4.1)**	**-0.070 (0.062)**	**-.030 (.033)**
Industry type: regulation	Positive	**Omitted**	**-0.232*** (0.076)**	**-.102*** (.039)**
Intellectual capital intensity	Positive	**Omitted**	**0.135*** (0.054)**	**.066*** (.024)**
Leverage (year t)	Positive	**-0.058 (0.085)**	**-0.001 (0.002)**	**-.0006 (.001)**
Profitability (ROE at year t)	Positive	**-0.075*** (0.022)**	**-0.003*** (0.001)**	**-.0003 (.0004)**
Liquidity (year t)	Positive	**1.352 (1.535)**	**-0.011 (0.032)**	**.048** (.020)**
Board size	Positive	**-0.29 (0.413)**	**-0.015* (0.008)**	**.010** (.004)**
Board composition	Positive	**9.104 (10.428)**	**-0.235 (0.200)**	**-.326*** (.111)**
Audit committee size	Positive	**-0.28 (0.677)**	**-0.006 (0.017)**	**-.004 (.013)**
Audit committee meetings (inverse)	Positive	**-29.886 (20.768)**	**-0.288 (0.346)**	**-.176 (.199)**
Remuneration committee size	Positive	**-1.097 (0.809)**	**-0.021 (0.018)**	**.0001 (.013)**
Remuneration committee meetings	Positive	**2.032 (1.584)**	**0.044 (0.037)**	**.045* (.023)**
Nomination committee size	Positive	**0.231 (0.539)**	**0.017 (0.011)**	**.0009 (.0055)**
Nomination committee meetings	Positive	**2.352** (1.055)**	**-0.0003 (0.025)**	**.023 (.015)**

(Level of significance: at .01, .05 or .10 ; Note: *: p<0.10; **: p<0.05; ***: P<0.01 at two tailed)

In identifying the determinants of human capital expenditure, the results of the fixed effect model, revealed that it is capable enough of explaining a considerable portion of the total variability (18.87%) as the model R square value is 0.1887. This value lies either in the same range as previous evidence or even slightly lower or higher comparing most of the intellectual capital related studies (Mendez et al., 2011; Chan

et al., 1990). According to the results of the fixed effect model, only nomination committee meetings was positively significant while the random analysis model under sensitivity analysis revealed that, in addition to the nomination committee meetings, firm size, audit committee meeting and remuneration committee meeting as well were recognised as statistically significant determinants following the hypothesised direction. The change must have been attributable to relaxing the assumptions under random effect model compared to the fixed effect estimator model. On the other hand profitability, was negatively significant under fixed effect estimator model, while the remuneration committee size as well was added to that under random effect estimator model as significant determinants of human capital investment conceptualised as human capital expenditure though in the opposite direction to the hypothesised relationship, perhaps due to the same reason of relaxing the assumptions. Though not statistically significant under the fixed effect estimator model, firm size, liquidity, board composition, audit committee meetings, remuneration committee and the nomination committee size followed the sign of the hypothesised direction. The time invariant variable, high intellectual capital nature, which was omitted in the fixed effect model, leverage, liquidity, board size and board composition, were positive though the relationships were not statistically significant according to the random effect model.

Extension of sensitivity analysis to the pooled linear regression with even more relaxed assumptions revealed that more variables such as firm size, high intellectual capital nature, leverage, board size and audit committee meetings revealed a positive significant relationship with comparatively higher level of significance. The change in results in between each model has revealed that both cross sectional and time

series nature has contributed to the overall variability while the variability explained by the independent variables are properly captured under the fixed effect estimator model of panel data analysis. Therefore, the results for each of the determinants followed a mixed pattern requiring each of them to be discussed separately explaining the scenario.

Considering the human capital per value added as a reflection of firms' investment in human capital, the results of the random effect regression was claimed to be the most suitable model according to Hausman test. The results (table 6.06) revealed that intellectual capital intensity was the only significant determinant of the human capital investment of the firms following the hypothesised direction under the fixed effect estimator model, while neither of the variables became positively significant under the fixed effect estimator model, which omit high intellectual capital nature from the analysis as its a time invariant variable. On the other hand, industry type (banking and finance or non banking and finance), firm profitability and board size as well were statistically significant as determinants of human capital investment even though the direction of the relationships are opposed to those in the hypotheses development questioning the theoretical reasoning behind hypotheses development. Though there was no statistically significant relationship, the coefficient for the audit committee meeting, remuneration committee meeting, nomination committee size, were positive and compatible with the hypothesised relationship. Comparison of the results with pooled linear regression with more relaxed assumptions revealed that more variables (remuneration committee meetings and nomination committee size) as well have revealed positive significant and negative significant (board composition) relationships. According to the results of all the three models: firm

size, firm leverage, liquidity, audit committee size, and remuneration committee size and nomination committee meetings were not statistically significant as determinants while the coefficients were also negative. On a positive note, model was capable enough of explaining 46.82% of the total variability, which was an acceptable level compared to the previous empirical evidence (Chen et al., 2005) or even higher compared to some studies with similar conceptualisation (Williams, 2004).

On the other hand, considering the human capital investment conceptualised using the financial reporting recognition of the voluntary human capital disclosure, according to the results of panel regression using fixed and random effect estimators, neither of them were significant, leading to relax assumptions related to panel setting and adopt pooled linear regression with robust standard error. Using the robust standard error when relaxing the regression assumptions allow to capture and adjust data quality issues related to model misspecification (Baltagi, 2005). The pooled linear regression model accounted for R square of 0.1850 revealing that the model is capable enough in explaining only 18.50% of the total variability, which is considerably lower than the human capital expenditure model and even some previous human capital and intellectual capital disclosure studies as well (Li et al., 2012; Samaha et al., 2012). Unlike other models, R square values were considerably lower under the fixed and random effect estimator models as well. However, comparative to mostly the disclosure related studies R square value had been significantly lower in alternative conceptualization mechanisms (e.g. Mendez et al., 2011; Abdolmohammadi, 2005). As determinants of human capital disclosure, intellectual capital intensity, firm liquidity board size and remuneration committee meeting are recognised as statistically significant determinants of human capital

investment, which confirm even the hypothesised (positive) direction. The analysis revealed that industry type categorised based on banking and financial or non banking and financial and board composition are recognised as statistically significant determinants of human capital investment even though the direction of the relationship is opposite to the hypothesised relationship (negative). On the other hand, variables including audit committee meeting, remuneration committee size, and nomination committee size and nomination committee meetings produced coefficients reflecting the hypothesised directions even though they were not statistically significant determinants of human capital investment. Ultimately firm size, firm leverage, firm profitability, audit committee size and were neither statistical significant nor reflecting the same direction as they were hypothesised in the model based on the coefficient values.

Considering all these models, high intellectual capital nature of the firms and some of the corporate governance related variables such as audit and remuneration committee functioning conceptualised as number of meetings and nomination committee size have revealed an overall positive influence over firms' investment in human capital even though they have not been statistically significant under all the models. On the other hand, considering the results under all the three models, industry type reflecting banking and finance industry or non-banking and finance industry, leverage profitability and audit committee size accounted for an overall negative impact despite the hypothesised relationship. Considering other variables, tested as determinants, mixed results as well have been observed based on different conceptualisation technique adopted, demanding an in detail discussion on each of the determinants.

6.3.1.2 Firm specific determinants of human capital investment

Firm size

Even though data on firm size was collected as the market capitalization of the firm at the end of the accounting year, it was converted to the natural log in order to deal with the data quality issues due to high skewness and kurtosis. Though the coefficient was positive, firm size was a not a statistically significant determinant under the fixed effect model. However, the strong positively significant relationship between the firm size and the human capital expenditure with regard to random effect estimator and the pooled linear regression models imply that firms with higher market capitalization spend more on the employees of the firm and this becomes an obvious fact for many operational aspects of the firm as well (Kadapakkam et al., 1998) confirming that lower transaction cost, economies of scale and easy access to capital afford to spend and invest more on their employees. However, when applying the human capital per value added and human capital disclosure as proxies for human capital investment the coefficients have been negative though the relationship has not been statistically significant for human capital disclosure. The positive significant relationship between firm size and human capital expenditure, have confirmed the arguments presented under hypotheses development i.e. larger firms with better access to external capital and less transaction cost and scale advantage allowing more investment (Kadapakkam et al., 1998). However, the fact that human capital disclosure is not found to be significant and revealing a negative sign has rejected the implications of some previous empirical evidence such as Ax and Marton (2008) where they discovered the relationship between the human capital management practices and the perceived importance of disclosing human capital

information in the annual report. This negative relationship n the other hand may have been a result of inadequate disclosure of human capital information or the in adequacy in terms of the format capturing the financial reporting recognition of human capital investment. Results however, have deviated from some of the previous empirical evidence, where firm size has strongly (at 0.01 level), and positively related with human capital disclosure measured in terms of indicative, qualitative and quantitative disclosure stages (Cormier et al., 2009).

The human capital expenditure of the firm can also be used as a way of reflecting the human capital management practice of the firm. Moreover, it can further be elaborated that bigger and obviously more sophisticated firms may account for higher human capital expenditure. However, the same situation has not been reflected via distribution of firm value creation or accounting and financial reporting recognition of firms' investment in human capital. It appears vital to introduce firm value added distribution for each category of stakeholders including employees for stakeholder decision making given the unbiased nature of firm value added in addressing firm financial performance. Nevertheless, the findings have been contradictory to the previous results on determinants of human capital and intellectual capital disclosure, where (Barako et al., 2006; Vithana and Gunaratne, 2009; Abdolmohammadi, 2005; Comier et al., 2009) where, firm size had shown a significant positive impact with voluntary disclosure in general or intellectual capital or human capital disclosure in particular. Moreover, the positive relationship of firm size with the human capital expenditure accompanied by the negative relationship with disclosure may have been a reflection of firms strategy on balancing stakeholder interests as well since the source document studied for data collection,

(i.e. annual report) is produced aiming predominantly the shareholders of the firm. In an environment where, human capital expenditure is not formally recognised as an investment generating greater future returns for the firms, shareholders may have preferred lower disclosure on human capital investment of the firms.

Intellectual capital intensiveness

According to the results of the determinants of human capital expenditure, the fixed effect estimator model appeared to opt out the high or low intellectual nature of the firms as a time invariant variable, while the coefficient is positive for both random effect and pooled linear regression models becoming significant in the pooled linear regression model, due the relaxed assumptions. On the other hand, results revealed a positively significant relationship with the proxies: human capital per value added and human capital disclosure under the best-suited models chosen. Therefore, high intellectual capital firms evidenced, have distributed a higher portion of value added to the employees and have significantly recognised the employee contribution via corporate financial reporting in the annual reports. The results have proven the established concept that human capital simply is the value creator of intellectual capital (Lev and Schewartz, 1971; Stewart, 1997) though it still has not claimed the right status in the firms' accounting and financial reporting aspects. The results have confirmed the previous empirical evidence as well, where researchers have discovered that firms belonging to intangible intensive industries invest more on intangible asset development (Amir and Lev, 1996). Moreover, even in general, industry type has had a greater emphasis on human resource planning, management and (Zula and Chermack, 2007), many other subsequent aspects such as accounting

and financial reporting recognition in general, (Ness and Mizra, 1991; Entwistle, 1999) and particularly in terms of human capital investment (Lepak and Snell, 2002) which confirm the findings of this current study.

Industry type

Despite high intellectual capital nature being positively related, a significant negative relationship is observed in between the industry dummy capturing the regulated and unregulated industries in terms of financial reporting, implying that, human capital per value added and the accounting and financial reporting recognition of human capital investment via voluntary disclosure for the banking and financial institutions are lower compared to the non banking and financial sector firms. This revealed that banking and financial sector with enhanced regulatory frameworks tend to recognise lower amount of information in terms of the human capital investment compared to the firms from non banking and financial industry as a part of voluntary financial reporting in firms' annual reports. This may have been a result of some aspect of the human capital investment such as remuneration, employee benefit and compensation, being mandatory based on the enhanced regulations. On the other hand, less freedom to introduce more voluntary aspects due controlled reporting atmosphere may have been attributable to the negative relationship observed above. Therefore, even though a positive relationship is hypothesised based on the assumption that enhanced regulatory frameworks have enhanced the recognition of vital important asset bases of the firms including human capital, this particularly is not proven via the information recognised through voluntary reporting practice. The results have even implied the reason behind exclusion of banking and financial

sector firms in the sample selection stage of many previous empirical studies on voluntary disclosure on intellectual capital or human capital investments (Cooke, 1989; Iatridis, 2008; Raffournier, 1995). They have justified the exclusion of one or more industries or choosing only one or several industries for the empirical analysis, considering the change in regulatory framework as the criterion. Oppose to that, in the current study, the industry variance in terms of financial reporting states are captured using dummy variable and the same would even be suggested in future studies too considering the generalizability of findings.

Despite being an employee sensitive industry, the results have reflected the expenditure perspective on human capital mostly adopted by banking and financial sector firm is contrary to perceiving it based on human capital theory, considering the situation in non banking and financial. This was explicit via both accounting and financial reporting recognition of human capital investment reflected through the seaming reluctance of the banking and financial sector firms to invest in human capital expenditure of the firms, human capital per value added value added as well as via the voluntary human capital disclosure in the annual reports of the firms. Based on a study conducted recently considering impact of high profile industrial firms and other firms on human capital information disclosure, Athanasios et al. (2013) revealed that industry type has no significant impact of human capital disclosure and supported the non existence of a strong relationship indicating that human capital investment in equally important for all the firms in unique way.

Profitability

Contrary to the positively hypothesised relationship relying on the human capital theory and long term sustainability, in this study, current year profitability measured, as return on equity was recognised as a statistically significant negative determinant of firms' investment in human capital conceptualised via human capital expenditure and human capital per value added. In addition, though not statistically significant human capital disclosure as well revealed negative coefficients reflecting an inverse relationship based on the results of pooled linear regression model. The negative relationship evidenced above in a way has reflected the current accounting treatment on human capital as it is, where the total human capital expenditure is written off in the income statement lowering the profit for the year. Moreover, the negative relationships evidenced in result confirm the other issues linked with human capital expenditure such as, short termism in decision-making and managerial opportunisms (Wilkes et al., 1996; Mahoney and Roberts, 2007).

The short-termism, "culture of low level of investment seeking easy financial return" (Wilkes et al., 96, p. 4) has mostly been used to justify the result of negative relationship between profitability of the firm and intangible and social related investment including investment in human capital (Green et al., 1996). Moreover, the results most importantly, highlight the reluctance of practitioners to categorise employees as an investment at all despite the continuous efforts by the academics and researchers (Roslender, 2009; Roslender and Fincham, 2004; Roslender and Stevenson, 2009). Moreover, the fact that management of the firm is mostly rewarded on performance appraisal parameters, which primarily are based on firm profit as well tend to question about conflict of interest in firms' decision on human

capital investment. The impact of this however, could hardly be assed as current expenditure classification and accounting and financial reporting recognition techniques being inappropriate to gather information required.

Since spending on employees being an expenditure under the current accounting treatment for the year of incurring itself resulting in lower profit (IAS 1 & 7), in order to maximise the short term profit firms tend to minimise the spending, which could then lead even to lower the human capital expenditure per value added as well as accounting and financial reporting recognition of employee contribution via voluntary human capital disclosure. Even though profitability has not widely been considered as a determinant of the level of human capital expenditure, many researchers studied about the level of human capital disclosure, intellectual capital disclosure and even corporate disclosure in general discovered that there is a relationship between the human capital and the profitability as an independent or dependant variable (Vithana and Gunaratne, 2009; Chen et al., 2005; Barako et al., 2006). However, they have generated mixed result providing empirical and theoretical justifications to negative positive and even neutral relationships. Human resource expenditure, and the portion of value added distributed to employees being a social cost, some researchers have argued that positive social performance via this can reduce the profit and shareholder wealth, which is even reflected via the negative relationship between profitability and the social and human capital expenditure (Roberts, 1992). However, based on the human capital theory, what amount of human resource expenditure can be capitalised has not clearly being clarified leaving even the decision makers in a doubtful scenario to decide what justify their decision regarding what firms have spent on employees and firms' recognition of employee

contribution in firm value creation through accounting and financial reporting practice.

Liquidity

According to the results of inferential analysis for determinant of human capital disclosure of the firms, under the best-suited model of pooled linear regression, current year liquidity of the firm has been recognised as positively related (at 0.05 level of significance) with financial reporting recognition of human capital investment. Results have generated positive but not statistically significant coefficients for the fixed effect and random effect estimator models as well. Considering liquidity as a potential determinant of human capital expenditure, both fixed and random effect estimator models have generated a positive coefficient though not statistically significant. On the other hand, contrary to both theoretical justification and the results for the other models in the same study, the results for human capital per value added, have neither been statistically significant nor followed the direction of the hypothesised relationship leaving both the model and conceptualization at a questionable stage. The results appeared to have overwritten the previous empirical findings in terms of human capital disclosure as a part of general disclosure, where liquidity is tested as a determinant of voluntary disclosure in general though addressing a different socio economic background (Barako et al., 2006), where researchers ended up with no significant relationship between firm liquidity and the voluntary disclosure opposed to the theoretical justification. Results observed in relation to human capital per value added have again confirmed the short termism involved in human capital investment related decisions, since the financial

reporting recognition of human capital investment via voluntary disclosure could be identified as an effort to compensate the impact of lower human capital per value added resulting in lower human capital investment in practice.

Out of the firm specific characteristics tested as determinants of investment in human capital conceptualised via different means leverage was the only characteristic, which is not statistically significant under any of the the selected model contrary to the positive relationship hypothesised based on the theoretical explanation of firms with the easy access to external debt capital easily afford to invest in intellectual capital of the firms including human capital which in certain instances are perceived to be high risky for the firms since firms do no own their employees. Results have conformed the findings of Comier et al. (2009) as well, where the relationship has been insignificant accounting for even negative coefficients. According to Soumaya (2012), previous empirical results have even evidenced mixed results in different scenario. However, positive significant (at .10 level of significance) relationship is observed only with regard to the pooled linear regression model for the human capital expenditure analysis as a part of sensitivity analysis and comparative interpretation. This may have been a result of relaxing several of many assumptions applied to the panel data analysis.

6.3.1.3 Corporate governance related determinants of human capital investment

Confirming the argument based on the agency theory, large boards provide firms with more resources in terms of knowledge, skills, experience etc., which can make use of firms' other resources (Lev, 2001), particularly to aligning the interests of different stakeholders including management and employees (Jensen and Meckling, 1976). Results revealed that board size exercise a significant positive impact (at 0.05 level of significance) on firms investment in human capital measured in terms of financial reporting recognition of firms' investment in human capital via voluntary disclosure reflecting the firm value creation. Considering firms' investment in human capital expenditure as well, the regression coefficients have been positive for random effect estimator model (not statistically significant) and the pooled linear regression model (statistically significant at .10 level of significance). However, revealing conflicting conceptualisation, the results have deviated for human capital per value added since board size is revealed as a negatively significant determinant of human capital per value added. Strong positive relationship of board size with human capital disclosure has confirmed the previous empirical evidence revealing, positive significant relationship between board size and human capital disclosure measured in terms of indicative and qualitative stages in previous studies (Cormier et al., 2009) as well. Though board size was a significant determinant for human capital disclosure reflecting the human capital theory, considering the general information disclosure, researchers have even evidence no association between board size and voluntary disclosure (Cheng and Courtenay, 2006). Contrary to the positive relationships observed between board size and the human capital disclosure however, larger boards has even proposed as a negative determinant of executive

compensation and pay performance sensitivity due to group dynamic effect and the coordination issues (Mendez et al., 2011). This may even explain the reason for insignificant relationship with human capital expenditure and particularly the negative significant result with human capital per value added. The deference in results may have been due to the deference in type of information belonging to each conceptualisation according to the results of Abeysekera (2010) study, which revealed that the impact of board size on intellectual capital disclosure could be different from tactical human capital to strategic human capital indicators.

Board composition, measured reflecting particularly the board independence, has been a significant determinant only for the human capital investment conceptualization via human capital disclosure based on the results for main model used for the analysis under each conceptualisation. In addition, according to the alternative models used for sensitivity analysis i.e. pooled linear regression, by relaxing more assumptions used in panel data analysis, board composition evidenced a negatively significant (at .10 level of significance) relationship with value added per human capital. Accordingly, opposed to theoretical argument, higher portion of non-executive directors in the board have resulted in lower human capital investment recognition via distribution of value added among employees and corporate reporting recognition as voluntary human capital disclosure. Results have rejected the theoretical argument used in hypotheses development, that is, large portion of independent directors, results in more transparency and better monitoring. Board independence as well have generated mixed results through previous studies where it generated positive coefficients for qualitative and quantitative type of disclosure and negative for indicative disclosure while only quantitative disclosure revealed a

statistically significant positive relationships (Cormier et al., 2009). Moreover, the results have confirmed the unanticipated negative association between board independence and voluntary disclosure in general as well, where human capital is just an individual component (Cheng and Courtenay, 2006). The measurement criterion used in the study, non executive directors to total number of directors may have had an impact on the findings since non executive directors of the firm does not necessarily means they are independent, as a result a different conceptualisation could be proposed to reflect the other dependant relationships directors have with the firm aspects.

Considering the impact of audit committee mechanism as a determinant of human capital investment of the firms, audit committee size has not at all been significant with either of the conceptualisation methods and the regression coefficient as well accounted as negative. Though it is assumed that audit committee size reflect the knowledge base thus the functioning and the decision effectiveness, it appears to be less relevant comparative to the actual functioning of the audit committees through meetings. Proposing this, on the other hand, number of audit committee meetings have evidenced negative regression coefficient indicating a positive relationship due to the use of inverse of audit committee meetings to solve the data quality issues. Among those, only the coefficient for human capital expenditure has been recognised as statistically significant under the alternative models used for sensitivity analysis including random effect estimator (at .10 level of significance) and pooled linear regression (at .10 level of significance). Mixed results are observed on regression coefficients for audit committee size, considering its' impact on different stages of human capital disclosure based on previous studies (Cormier et

al., 2009) even though the results are not statistically significant. The results have deviated from some of the previous studies considering information disclosure in general, where simply the presence of audit committee itself, have created a positive impact (Barako et al., 2006), let alone the size and the functions. Both audit committee size and number of meetings conducted, have evidenced a strong positive relationship with intellectual capital in UK context as well (Li et al., 2008). Even though the audit committee involvement in human capital investment measured via accounting and financial reporting recognition has not been obvious or very significant yet, in an effort to formalise human capital management and accounting practice, audit committee has been even proposed as a responsible body to confirm on balance and objective reporting (DTI, 2003a & b).

On the other hand, reflecting the existing relationships between the human capital investment proxies and the nomination and remuneration committee responsibilities, on many aspects, board nomination and remuneration committee mechanism has become a positive determinant of firms' investment in human capital conceptualised via accounting and financial reporting recognition except for the negative coefficients observed in terms of remuneration committee size. Remuneration committee size has even been a negative significant determinant of human capital expenditure under the alternative models used relaxing the assumptions including random effect estimator and pooled linear regression model. This as well may have been a result of group dynamic effect and the coordination issues as it was for the board size (Mendez et al., 2011). Even though the coefficients were negative, they were not statistically significant determinant of the other two aspects (human capital per value added or the human capital disclosure of the firms) conceptualising firms'

human capital investment. However, number of meeting of the remuneration committees has generated positive coefficients with regard to all conceptualization mechanisms while the relationships with human capital expenditure and human capital disclosure were statistically significant as well (at .10 level of significance). Moreover, number of nomination committee meetings as well has been a positive significant determinant of human capital expenditure. This confirms the fact that functioning of the committees determine firms aspects better that the size of the committees. Comparative interpretation of the results with the previous empirical evidence, however, have been limited since none of the previous disclosure studies have incorporated the size and the number of remuneration committees and nomination committees in to their models as determinants of firms investment in human capital or intellectual capital. However, the positive significant results particularly highlight the significance of the monitoring, evaluation and the supervisory role they play in human capital management and investment process including accounting and financial reporting recognition of firms' human capital investment.

In this analysis, research hypotheses are developed to discover the determinants of human capital investment relying on the human capital argument using the data from the current financial statements and the annual reports which does not still treat employees as an investment. Therefore, both positive and negative results were revealed based on current conceptualisation. The analysis has further been extended to provide a holistic picture on human capital investment by firms, by analysing the variance in human capital investment highlighting the consequences expected via this investment. The consequences have been hypothesised considering both firm

financial performances and the stock market performances. The results have been interpreted in the next section.

6.3.2 Consequences of firms' investment in human capital

Variance observed in firms' investment in human capital in this study is conceptualised in two directions: backward, analysing the determinants of human capital expenditure to see what types of firms invest on people and forward, looking at the consequences of human capital investment to discover what firms receive in return as a result of investing or spending more money on people of the firms. This section hence, analyses and interprets the results to discover the consequences of investment in human capital conceptualised via accounting and financial reporting recognition of this investment measured from different perspectives.

In determining the consequence of different accounting and management practices on the performance indices number of control variables have been used. Since many accounting practices and the accounting and the financial performances of the firms depend on company specific characteristics including, firm size (Mangena and Tauringana, 2007; Kamath, 2008; Chan, 2009a and b; Mahoney and Roberts, 2007), industry type (Mahoney and Roberts, 2007), current year leverage (Mangena and Tauringana, 2007; Kamath, 2008; Chan, 2009a and b; Mahoney and Roberts, 2007, current year profitability measured as return on equity (Mangena and Tauringana, 2007; Kamath, 2008) and current year liquidity (Mangena and Tauringana, 2007),

the same have been considered as control variables in determining the consequences of human capital investment conceptualised via accounting and financial reporting recognition of this investment by firms as well. Given the limitations in categorising the capital and revenue types of human resource expenditure separately to measure the actual human capital investment by firms, the accounting and financial reporting recognition of human capital investment measured via human capital expenditure, human capital per value added and human capital disclosure have been chosen to conceptualise firms' human capital investment.

Relying on the previous empirical analysis, as the potential consequences of the firms' investment in human capital: employee productivity, contemporaneous and lead stock return, contemporaneous and lead profitability measures as return on total assets, were tested statistically. These potential consequences were determined in a way that they represent firms' managerial and financial performances and stock market performances. Similar to the determinants analysis, due to the un-equal sample size for five years as a result of data unavailability, unbalanced panel regression technique was applied to test the research hypotheses developed in the methodology section. The analysis primarily used both fixed and random effect estimator models, while Hausman test (Hausman, 1978) was adopted to decide the best-suited model. The results for the statistical analysis, consequences of human capital investment are illustrated in table 6.10. The results further accompanied pooled linear regression using robust standard error as a past of sensitivity analysis and comparison of findings table 6.11.

6.3.2.1 Model Suitability

According to the results for Hausman test, except for the consequence of human capital per value added and human capital disclosure on employee productivity of firms, fixed effect model was concluded as the model best explaining the variability since there were no enough evidence to reject the null hypothesis of the Hausman test of difference in coefficients for fixed and random effect estimator models are not systematic (Table 6.10). However, the table 6.10 has illustrated the results for both based on fixed and random effect estimators for all the models, including Hausman test results used in choosing the best model explaining each specific scenario. In addition, statistical results for the poled linear regression with more relaxed assumptions have been illustrated in the table 6.11 as a part of sensitivity analysis and comparative interpretation.

Table 6.10: Results for the consequences of human capital investment: Panel data analysis with fixed effect and random effect estimator

Dependant variable	Panel model	Constant	Independent variable			Control variable					R square (model sig.)	Hausman statistics
			HC expenditure	HCVA	HCD	Firm size	Industry type	Leverage year t	Profitability year t	Liquidity year t		
Employee productivity	**Fixed Effect (S)**	-.0498 (.1420)	.0011* (.0007)			.0079 (.0317)	Omitted	-.0006 (.0006)	.0008*** (.0002)	-.0042 (.0111)	.1820 (.0000)	chi2(5) = 13.46
Employee productivity	Random Effect	.0140 (.1060)	-.0002 (.0005)			.0175 (.0247)	-.0456 (.0309)	-.0010* (.0006)	.0008*** (.0001)	.0008 (.0104)	.1970 (.0000)	Prob>chi2 = 0.0194
Employee productivity	Fixed Effect	.0368 (.1381)		-.0033 (.0023)		.0026 (.0319)	Omitted	-.0007 (.0006)	.0007*** (.0002)	-.0062 (.0111)	0.1772 (.0000)	chi2(5) = 5.61
Employee productivity	**Random Effect**	.0341 (.1066)		-.0033 (.0023)		.0107 (.0235)	-.0431 (.0318)	-.0009 (.0005)	.0007*** (.0002)	-.0005 (.0103)	.1472 (.0000)	Prob>chi2 = 0.3463
Employee productivity	Fixed Effect	.0045 (.1384)			.0364 (.0417)	.0044 (.0320)	Omitted	-.0008 (.0006)	.0008*** (.0002)	-.0048 (.0111)	0.1694 (.0001)	chi2(5) = 4.28
Employee productivity	**Random Effect**	.0126 (.1083)			.0255 (.0386)	.0120 (.0236)	-.0461 (.0323)	-.0010* (.0006)	.0008*** (.0001)	.0005 (.0103)	.1306 (.0000)	Prob>chi2 = 0.5094
Stock return	**Fixed Effect**	-560.512*** (105.0169)	-.9127* (.4783)			144.9734*** (23.4183)	Omitted	-.1375 (.4738)	-.0065 (.1291)	-.9782 (8.1760)	.2680 (.0000)	chi2(5) = 28.36
Stock return	Random Effect	-81.9756** (38.0774)	-.5538*** (.1504)			29.5388*** (9.3111)	-3.7523 (9.4432)	-.5273* (.2851)	-.0120 (.1027)	7.9359 (5.4975)	.2022 (.0000)	Prob>chi2 = 0.0000
Stock return	**Fixed Effect**	-613.2255*** (103.1586)		-.0782 (1.7077)		145.8722*** (23.8075)	Omitted	-.0355 (.4782)	.0660 (.1282)	-.6081 (8.3130)	.2491 (.0000)	chi2(5) = 35.59
Stock return	Random Effect	-20.5006 (35.3950)		-2.6693* (1.6410)		8.8269 (7.5932)	-2.9953 (9.7204)	-.6262** (.2916)	.0205 (.1071)	9.0600 (5.6427)	.1799 (.0019)	Prob>chi2 = 0.0000
Stock return	**Fixed Effect**	-612.2511*** (102.9154)			-5.2140 (31.0052)	146.2977*** (23.7908)	Omitted	-.03392 (.4772)	.0686 (.1249)	-.5586 (8.2777)	.2492 (.0000)	chi2(5) = 32.34
Stock return	Random Effect	-25.1883 (37.4239)			3.5187 (19.6940)	8.9588 (7.7174)	-3.8064 (9.8635)	-.6569** (.2945)	.0674 (.1046)	9.2552 (5.7353)	.1420 (.0065)	Prob>chi2 = 0.0000

Current year ROA	**Fixed Effect**	29.2183** (11.848)	-.1202** (.0540)			-4.0876 (2.6421)	Omitted	-.0238 (.0535)	.1147*** (.0146)	.2443 (.9224)	.3907 (.0000)	chi2(5) = 25.16
Current year ROA	Random Effect	-6.9038 (7.0022)	-.0530* (.0293)			2.3863 (1.6990)	5.9734*** (1.7785)	-.0582 (.0441)	.1210*** (.0139)	.9475 (.8117)	.6232 (.0000)	Prob>chi2 = 0.0001
Current year ROA	**Fixed Effect**	20.2346* (11.5918)		.2995* (.1919)		-3.5842 (2.6752)	Omitted	-.0167 (.0537)	.1297*** (.0144)	.4312 (.9341)	.3796 (.0000)	chi2(5) = 20.64
Current year ROA	Random Effect			.3829** (.1943)		.9551 (1.4952)	5.8288*** (1.7900)	-.0728* (.0440)	.1329*** (.0140)	1.2187* (.8077)	.6094 (.0000)	Prob>chi2 = 0.0001
Current year ROA	**Fixed Effect**	19.4785* (11.3550)			9.5566*** (3.42093)	-4.5583* (2.6249)	Omitted	-.0163 (0527)	.1222*** (.0138)	.2709 (.9133)	.4019 (.0000)	chi2(5) = 28.25
Current year ROA	Random Effect	-4.9846 (6.9673)			3.7865 (3.0094)	.81534 (1.5061)	5.8475*** (1.8072)	-.0661* (.0441)	.1259*** (.0136)	1.0278 (.8119)	.5779 (.0000)	Prob>chi2 = 0.0000
Next year ROA	**Fixed Effect**	11.8371 (14.1542)	-.2080*** (.0645)			1.5832 (3.1563)	Omitted	.0695 (.0639)	-.0108 (.0174)	.3624 (1.1020)	0.0834 (0.0295)	chi2(5) = 31.82
Next year ROA	Random Effect	-19.3439** (8.1409)	-.1073*** (.0339)			5.8290*** (1.9829)	8.6111*** (2.0451)	.0098 (.0524)	.0082 (.0168)	2.2107** (.9687)	.4833 (.0000)	Prob>chi2 = 0.0000
Next year ROA	**Fixed Effect**	-.4240 (14.2250)		.0201 (.2355)		1.8351 (3.2829)	Omitted	.0920 (.0659)	.0063 (.0177)	.4637 (1.1463)	0.0158 (0.8100)	chi2(5) = 29.51
Next year ROA	Random Effect	-11.8354* (7.9271)		.1268 (.2438)		2.7245* (1.7505)	8.5350*** (2.0887)	-.0121 (.0536)	.0218 (.0174)	2.6146*** (.9899)	0.4517 (0.0000)	Prob>chi2 = 0.0000
Next year ROA	**Fixed Effect**	-.7252 (14.1868)			1.5176 (4.2740)	1.7146 (3.2795)	Omitted	.0915 (.0658)	.0056 (.0172)	.4504 (1.1411)	0.0167 (0.7923)	chi2(5) = 30.80
Next year ROA	Random Effect	-10.2983 (8.0836)			-2.7338 (3.6396)	2.7240* (1.7377)	8.6788*** (2.0772)	-.0107 (.0533)	.0200 (.0169)	2.6589*** (.9889)	0.4654 (0.0000)	Prob>chi2 = 0.0000

(Level of significance: at .01, .05 or .10 ; Note: *: p<0.10; **: p<0.05; ***: P<0.01 at two tailed)

Table 6.11: Results for the consequences of human capital investment

Dependant variable	Constant	Independent variable			Control variable					R square (model sig.)
		HC expenditure	HCVA	HCD	Firm size	Industry type	Leverage year t	Profitability year t	Liquidity year t	
Employee productivity	-.2485** (.1042)	-.0014*** (.0005)			.0883*** (.0252)	.0390 (.0313)	.0010 (.0008)	.0006*** (.0002)	.0186 (.0154)	R-squared = 0.2095 Prob > F = 0.0000
Employee productivity	-.0915 (.0992)		-.0055** (.0023)		.0351* (.02)	-.0374 (.0313)	-.0013 (.0008)	.0007*** (.0002)	.0216 (.0158)	R-squared = 0.1476 Prob > F = 0.0000
Employee productivity	-.0804 (.0990)			-.0265 (.0545)	.0348* (.0202)	-.0380 (.0316)	-.0014 (.0008)	.0008*** (.0002)	.0229 (.0159)	R-squared = 0.1398 Prob > F = 0.0001
Stock return	-81.9757** (40.1221)	-.5538*** (.1569)			29.5388*** (9.4547)	-3.7523 (9.8858)	-.5273** (.2643)	-.0120 (.1093)	7.9359 (6.4854)	R-squared = 0.1493 Prob > F = 0.0001
Stock return	-20.5006 (33.8147)		-2.6693*** (.4922)		8.8268 (6.6919)	-2.9953 (10.5277)	-.6262** (.2938)	.0205 (.1122)	9.0601 (6.7229)	R-squared = 0.1004 Prob > F = 0.0000
Stock return	-23.638 (32.6)			3.2551 (18.3869)	8.6400 (6.7039)	-3.7802 (10.3864)	-.6572** (.2825)	.0673 (.1114)	9.1866 (6.8031)	R-squared = 0.0878 Prob > F = 0.0057
Current year ROA	-17.3318*** (6.1627)	-.0492** (.0234)			4.7540*** (1.4701)	4.8369** (2.2817)	-.0999 (.0756)	.1369*** (.0258)	1.9144** (.9737)	R-squared = 0.5989 Prob > F = 0.0000
Current year ROA	-12.2097** (5.4491)		.4013** (.1837)		2.8708*** (1.0626)	4.7398** (2.3950)	-.1161 (.0816)	.1507*** (.0265)	2.0691** (.9935)	R-squared = 0.5946 Prob > F = 0.0000
Current year ROA	-11.1904** (5.6653)			-1.5210 (3.1618)	2.9000*** (1.0881)	4.8887** (2.2915)	-.1116 (.0773)	.1433*** (.0251)	2.082** (.9964)	R-squared = 0.5891 Prob > F = 0.0000
Next year ROA	-23.9814*** (6.3333)	-.0854*** (.0247)			6.5291*** (1.5113)	7.1828*** (1.7497)	-.0419 (.0441)	.0433* (.0223)	3.3347** (1.4714)	R-squared = 0.4297 Prob > F = 0.0000
Next year ROA	-14.7948** (6.2549)		.1629 (.1256)		3.2922** (1.2711)	7.1516*** (1.8840)	-.0639 (.0514)	.0581** (.0231)	3.5578** (1.5256)	R-squared = 0.3983 Prob > F = 0.0000
Next year ROA	-11.5269* (6.8247)			-5.9945 (3.8004)	3.3097*** (1.2887)	7.3730*** (1.8220)	-.0625 (.0503)	.0533** (.02209)	3.7333** (1.5357)	R-squared = 0.4073 Prob > F = 0.0000

(Level of significance: at .01, .05 or .10 ; Note: *: p<0.10; **: p<0.05; ***: P<0.01 at two tailed)

6.3.2.2 Consequences of human capital expenditure

According to the results for the panel data analysis with fixed effect estimator employee productivity, stock return, contemporaneous profitability, and lead profitability were identifies as significant consequences of human capital expenditure. Out of them, employee productivity revealed a positive relationship with the human capital expenditure of the firms, implying that, the higher the amount firms spent on people, the higher the employee productivity of the firm. However, all the other consequences hypothesised including stock return, contemporaneous profitability, and lead profitability resulted in a negative relationship with firms' human capital expenditure. This has proven the fact that, spending on employees of the firm not only lowers the accounting profitability of the current year but also lead even adverse consequences for the subsequent accounting years. Similarly, the adverse reflection of the current accounting treatment on human capital investment resulting in lowering the profit, lead external investors as well to respond negatively for the human capital spending of the firms.

6.3.2.3 Consequences of human capital per value added

Among the consequences hypothesised, only contemporaneous profitability was a significant consequence of human capital investment conceptualisation based on human capital per value added. Confirming the hypothesised relationship direction the results have generated a positively significant coefficients as well though its

significant only at .10 level of significance. However, apart from the main model, relaxing the assumptions farther to random effect estimator model as well has made the coefficients significant even at .05, level of significance. Though the results were not statistically significant the lead profitability as well has generated positive coefficients confirming the hypothesised relationship. The relationship of the human capital per value added with employee productivity and stock return on the other hand generated negative coefficients while stock return has even been accounted for as a significant consequence of value added per human capital based on the random effect estimator model of the panel data analysis.

6.3.2.4 Consequences of human capital disclosure

According to the results of the panel data analysis (table 6.10), contemporaneous profitability was identified as a significant positive consequence of the human capital investment measured in terms of the human capital disclosure. Moreover, though the relation ship is not statistically significant, employee productivity and lead profitability as well have generated positive coefficients. Stock return has generated negative coefficient under the fixed effect estimator model while the alternative, random effect estimator model with relaxed assumptions generated positive coefficients. The results imply that human capital investment conceptualised via financial reporting recognition through voluntary disclosure has reflected the implication of the human capital argument compared to the other two conceptualisations: human capital expenditure and the human capital per value

added by indicating positive significant relationships with the potential consequences. Since it appears that, stakeholders pay attention to and rely on the qualitative disclosure on the human capital information in understanding firms' investment in human capital, the practice need to be carefully examined for the accuracy, uniformity and true and fair representation of firm situation.

The sensitivity analysis of results comparative to those of pooled linear regression with robust standard error revealed that the results are confirmed through the alternative analysis mechanism, pooled linear regression as well except for the fact that the relationships under pooled linear regression have evidenced stronger compared to the other two analysis techniques. This may have been a reflection of relaxed assumptions involved with pooled linear regression compared to the panel data analysis technique. Due to the fact that the results for the consequence analysis has varied from one consequence to the other considering hypotheses developed, each of the consequences has separately been discussed and interpreted in light of the previous empirical evidence and the theoretical foundation behind hypotheses development.

6.3.2.5 Human capital investment and employee productivity

In discovering the relationship between human capital investment and employee productivity of firms, using the accounting and financial reporting recognition of the practice, employee productivity has only been a significant consequence of human

capital expenditure revealing a positive relationship. Even though other relationships were not significant, the regression coefficient for the human capital disclosure as well was positive. Results for the investment in human capital conceptualised via human capital expenditure and have confirmed the previous empirical findings (Edvinsson and Malone, 1997; Holzer, 1990; Chen et al., 2005), while the other two has rejected by not evidencing a significant positive relationships with the employee productivity. According to the f statistics (Prob > F = 0.0000) and the chi square (Prob > chi2 = 0.0000) values the overall models have been significant for all the three models. The model R square value has varied from .1306 to .1970. Even though the R square values are lower in general, in certain instances particularly considering the disclosure studies, it in certain instances has even evidenced dropping below the level observed in this study (Chen et al., 2005; Roberts, 1992).

The positive significant relationship observed in between human capital expenditure and productivity supports the human capital theory argument implying that the higher the amount firms spent on employees the higher the employee productivity it result in though the same have not been supported by the other conceptualisation. This certainly indicates either the incapability of the current conceptualisation mechanism related to the study or the inappropriate practice by firms in capturing the firms' human capital investment. In addition, some previous studies as well have suggested that even though companies spend money to affect employees' knowledge and motivation the entire amount spent will not contribute in creating assets for the firms (Lev and Schewartz, 1971). This situation further highlights the requirement of a logical mechanism in valuing firms' true human capital investment.

6.3.2.6 Human capital investment and profitability

In regressing the firm profitability (ROA) as a consequence, due to the nature of the investment both contemporaneous and the lead profitability was taken in to account. The regression models explaining the relationship between human capital investment and contemporaneous profitability as well have been significant for both fixed effect estimator and the random effect estimator models based on the F statistics (Prob > F = 0.0000) and the Chi square (Prob > chi2 = 0.0000) values of the two models. Comparisons of coefficients of the two models via Hausman test however, have revealed that fixed effect estimator is the best-suited model for interpretation (table 6.10). Moreover, the model explanatory power in terms of the R square values as well have significantly improved considering the fixed effect estimator model ranging between .3769 and .4019, which is significantly higher compared to many previous models (Chen et al., 2005). However, in certain instances, studies have generated higher R square values for similar studies (Li et al., 2008).

The results revealed that the relationship between human capital expenditure and the firm contemporaneous profitability have been statistically significant (at .05 level of significance) and negative reflecting the current accounting treatment for employee spending lowering the book profit. However, confirming the proposed human capital argument, portion of human capital per value added and the financial reporting recognition of human capital investment via qualitative disclosure has revealed statistically significant positive relationships with the contemporaneous profitability of the firm. Accordingly, the higher the portion of value added distributed to the employees and the higher the recognition given to the employees via financial

reporting practice, the higher the profitability they result in, by suggesting employees as an asset for the firm. Results confirm the previous empirical evidence highlighting firms' investment and voluntary recognition in intellectual capital and human capital investment (Chen et al 2005; Bontis et al., 2000; Riahi-Belkaoui, 2003).

A similar situation has been resembled via the relationship between human capital investment and the lead profitability in certain aspects. The results revealed lead profitability as a negative significant consequence of the human capital expenditure. However, out of the three conceptualisation under fixed effect estimator model, only the model for consequence of human capital expenditure on lead profitability has been significant considering the overall model significance (at .05 level of significance). Whereas, the models for the consequences of human capital per value added and the human capital disclosure under fixed effect estimator have not been significant at all. In this scenario the results have generated positive coefficients though they have not been statistically significant. Moreover, in lead profitability scenario, the model R square values for the fixed effect estimator models as well have been extremely lower compared to the previous results ranging between .0158 and .0834, questioning the validity of the findings particularly considering the model explanatory power, which is considerably low. Conflicts in conceptualisation of human capital investment, high volatility in the economic environment, critical human resource management related decisions such as employee redundancies, layoffs etc. as a result of the onset of economic crisis might have been an explanation behind the weak results observed above. In terms of the conceptualisation, not recognising the actual human capital investment of firms in a

particular year, than writing it off fully in the year it's incurred as well may have generated volatile results for the current as well as the subsequent accounting years.

6.3.2.7 Human capital investment and stock return

Panel regression with fixed effect estimator has also been selected as the model suitable in explaining the relationship of, the impact of firms' human capital investment on stock return for all three methods of human capital conceptualisation. The model suitability above has been evidenced via F statistics (Prob > F = 0.0000), Chi square (Prob > chi2 = 0.00) and the results for the Hausman test, which justify the selection of the fixed effect model of the interpretation (table 6.08). In addition, the model explanatory power, particularly for the chosen fixed effect estimator was higher ranging between .2491 and .2680 compared to the employee productivity model in the current study and some of the other intellectual capital related studies (Chen et al., 2005).

Opposed to the hypothesised positive relationship relying on the human capital theory, results of the current study have revealed a negative significant relationship between human capital expenditure and stock return (at .10, level of significance). Even though the relationships have not been statistically significant, the regression coefficients for the human capital per value added and human capital development have been negative, revealing the possibility for a negative relationship. Results have rejected the previous empirical evidence (Lajili and Zeghal, 2006 & 2005b; Dumay

and Tull, 2007), in which the relationships were positively significant. The negative relationships observed have rejected the main assumption behind theoretical framework, the human capital theory argument. Moreover, the contradictory results may have been a result of conflicting conceptualisation and the inadequacy in the current practice, accounting and financial reporting recognition of human capital investment. As a consequence, the results of the current study however, has failed to confirm the argument proposed via previous theoretical and empirical explanations that, human component of firms is the perfect value driver making the strategic success of the firm (Royal and O'Donnel, 2008; Boedker et al., 2004). This implies that it's imperative to consider alternative perceptions on accounting and financial reporting recognition of firms' human capital expenditure, contribution of firm value added by the employees and the voluntary human capital disclosure.

6.4 CONCLUSIONS

"Rose is a rose is a rose", "human capital is not human capital is not human capital" (Flamholtz, 2005, p. 79)

Unlike it is for many accounting concepts with justifications explaining the characteristics, the explicit or implicit human capital concept is still treated as a global undifferentiated construct with little or no induce on future progress in terms of accounting and financial reporting recognition of human capital investment (Flamholtz, 2005).

Against this backdrop, the current study is undertaken to examine and understand firms' practice of investment in human capital as it's conceptualised via accounting and financial reporting recognition of human capital investment in listed firms. The research hypotheses are formulated relying on the human capital theory argument, assuming that firms recognise human resources of the firms as an asset opposed to what's reflected through the current accounting treatment and they tend to invest in human capital of the firms expecting benefits over more than a single period opposed to treating it as expenditure and minimise the cost. The results revealed that the accounting and financial reporting recognition of human capital investment of the firms have been induced by some firm specific and corporate governance related factors including firm liquidity, size, intellectual capital intensity, nomination, remuneration and audit committee meetings, board size etc., while the results have been hugely volatile considering the three different conceptualizations: human capital expenditure, human capital contribution in firm value added and the human capital disclosure. Moreover, positively hypothesised determinants of human capital such as, firm profitability (return on equity), firm leverage and industry type have evidenced inverse relationships implying that firms still treat employees as just an expenditure for the firm despite the number of times they state employees are their greatest asset.

Considering the consequences hypothesised as well, deferential responses have been evidenced for human capital investment conceptualised in different techniques. As an example, human capital expenditure has improved the employee productivity of the firms under the study, though it resulted in a negative relationship with firm profitability and stock return revealing the implications of the current accounting

treatment. On the other hand, human capital disclosure has had positive impact on both employee productivity and profitability though not reflected via stock return implying that external stakeholders still poorly recognise qualitatively disclosed human capital investment related information in annual reports as a reflection of firms human capital investment due to the voluntary nature in the practice. Accordingly the results have rarely confirmed the hypotheses formulated based on the human capital argument both in term of determinants and consequences of human capital investment of the firms, questioning whether firms actually treat employees as an asset for the firms and believe in the practice human capital accounting.

Considering the way determinants and the consequences behave in the two sets of the relationships hypothesised above, it is possible to conclude that, the results of the analysis have not confirmed the human capital theory argument used in the hypotheses development based on the founding researchers (Cantillon, 1755 and Adam Smith, 1776, as cited by Dooley 2005; Schultz, 1961; Becker, 1962; Backer, 1993). The difference between qualitative recognition and the results for the quantitative analysis implies that there is a conceptual gap in terms of the accounting and financial reporting recognition of human capita investment of the firm. This could have been remedied via a standard framework for the practice accounting and financial reporting recognition of human capital investment, which is governed through proper guidelines.

CHAPTER SEVEN

CONCLUSIONS

7.1 INTRODUCTION

This study was conducted addressing the research gap observed in terms of the current and expected scenario considering the decision usefulness of the information produced via accounting and financial reporting recognition of human capital investment. The first research objective of understanding the current practice, investment in human capital by listed firms as its reflected via accounting and financial reporting recognition of this investment in the annual reports of the firms in FTSE 100 listing of London stock exchange, is addressed in chapter five via descriptive analysis techniques. The second research objective of discovering the determinants and the expected consequences of accounting and financial reporting recognition of human capital investment in annual reports of the firms in FTSE 100 listing of London stock exchange is addressed in chapter six mainly through the inferential analysis techniques. Results of the analysis and interpretation is used in defining considerations for proposing alternative frameworks which could be utilised for accounting and financial reporting recognition of human capital investment, in a way that it provide robust information to different categories of stakeholders of the firms.

Aiming this the chapter discusses about the implication of the results especially considering on developing an alternative mechanisms for accounting and financial

reporting recognition of human capital investment in listed firms. Moreover, the political involvement in relation to the development and the expansion of the field human capital accounting is discussed particularly considering the involvement of state governments and the regulatory bodies. The discussion is then followed by the limitations of the study highlighting recommendations and further research avenues.

7.2 DISCUSSION OF RESULTS AND IMPLICATIONS

Data analysis of the study consists with both descriptive and inferential analysis techniques, which has taken in to account both quantitative and qualitative information in relation to the accounting and financial reporting recognition of human capital investment. Descriptive analysis of the study revealed a considerable variance in accounting and financial reporting recognition of investment in human capital considering the time period, industry firms belongs, advance regulatory frameworks adopted etc.. This implies that the non availability of a regulatory framework governing the practice accounting and financial reporting recognition has had implications on firms' practices, which may provide an undue freedom for those who prepare financial statements even to manipulate the information they reports. This particularly becomes the case, as there is no appropriate mechanism to quantify the human capital investment separately from the revenue expenditure portion. On the other hand, in the absence of a standard reporting framework, the variance in the practice among firms tends to be wider. Moreover, due to the absence of a standard framework governing the practice, despite human capital being a significant piece of

information reflecting the strategic positioning of the firms, stakeholders as well tend to be reluctant to rely on the information provided in the annual reports. As a result, the decision usefulness of the information provided according to the current accounting and financial reporting recognition framework are been questioned demanding for an appropriate framework for accounting and financial reporting recognition of human capital investment (Boedker et al., 2004).

According to the descriptive analysis of human capital information disclosed in the annual reports, even though the disclosure index is developed considering the overall reflection of, how important each of the human capital value creation factors in firm contributes in value creation, the results revealed that firms tend to disclose information in a different degrees at human capital disclosure category level as well as individual human capital value creation factor level. As an example, even though all the four categories, learning and growth, internal business process, customer perspective and financial perspective are interlinked and act as a foundation for the other level in firm value creation, firm disclosure under each category has varied revealing that firms tend to disclose more on customer perspective followed by internal business process while financial perspective category followed by learning and growth perspective were less relatively recognised through voluntary financial disclosure. While the results have deviated from the theoretical explanations, they could not have been compared with the previous findings, as the previous categorizations have mostly been different from one another.

On a positive note though, the overall disclosure under each category have revealed marginally increasing, except for the 2008 and 2009 accounting year, which could

have been an impact of being at the onset of financial and economic crisis. This is confirmed via the fact that falling employment (Poole, 2010) had been recognised as an adverse consequences of the financial crisis (end 2007 to 2009) though the exact time period can hardly be demarcated preventing a pre and post crisis analysis in the current study.

With an exception for firms belonging to banking and financial industry, human capital value creation factors categorised under financial perspective has been the least recognised among the others considering all the years under analysis. Inadequate recognition of human capital value creation factors with financial implication on firms as a part financial reporting tend to automatically restrict information considering both human capital expenditure as well and the investment, which could have been a value relevant for number of stakeholder categories. In that sense opposed to the current expenditure perspective, it is imperative to make the link between spending on employees or specially the films investment in employees with the performance outcome of these investment (i.e. revealing the way investment in employees helps create value in future) explicit to the stakeholders of the firms in general.

Considering the individual value creation factors, work environment and culture, employee involvement, employee numbered including demography analysis, employee expenses and pension, health and safety, employee training programmes, human resource management and functions have been the most recognised, whereas, value added or revenue contribution per employee, human resources director and committee involvement, industrial relations and union activities, employee feature

representation respectively belong to the least recognised category. Even though least or no disclosure of some items such as involvement of human resource director committees, value added, profit or revenue contribution per employee, industrial training and union activities in the annual reports confirm previous empirical evidences (Subbarao and Zeghal, 1997) it does not necessarily mean that they are not value relevant as researchers have not studied about the perception of several categories of stakeholders, which is a grey area in human capital research.

The inferential analysis on the other hand attempted to explain the variance observed in the accounting and financial reporting recognition of firms' human capital investment. The results of the first analysis, determinants of accounting and financial reporting recognition of human capital investment, revealed that firm size, intellectual capital intensity, industry categorised based on the enhanced regulation mechanism, profitability, firm liquidity, and some of the corporate governance attributes including board and committee mechanism of the firms have had significant impact on different aspects of accounting and financial reporting recognition of firms human capital investment. The results have not always been consistent with the hypothesised directions, as they have individually interpreted under chapter six, determinants of accounting and financial reporting recognition of human capital investment. Results, not only attempt to explain the deviation in practice but also propose an alternative mechanism to be adopted in accounting and financial reporting recognition of human capital investment.

Even though there were some positive relationships between different ways of conceptualising the accounting and financial reporting recognition of human capital

investment with different types of consequences, as it was illustrated under chapter six, the result have not always been consistent and produced positive relationships. Particularly considering the conceptualisation based on human capital expenditure an inverse relationship in evidenced opposed to the human capital conceptualization based on voluntary human capital disclosure. The mixed results observed above imply that, accounting and financial reporting recognition of human capital investment is a piece of value relevant information even though it has not been always confirms based on current information systems. A clear question is raised over mostly negative relationship human capital expenditure is having with the financial implications such as contemporaneous and lead profitability indicators and stock return despite the positive impact the same has had on employee productivity. This criticise over the current accounting treatment for the total amount spent on employees which does not reveal any information on human capital assed base firms own and the human capital employees bring in and developed within the firm.

On the other hand, the positive significant relationship human capital disclosure evidenced with the current year profitability and the mostly positive coefficients though not significant with the other conceptualisation, proved that human capital disclosure is recognised as a piece of value relevant information for stakeholders. However, confirming the question raised by several previous researchers as well, the credibility of the information produced via human capital disclosure is being questioned given the fact that human capital information produced in the annual reports are just voluntarily, non audited and followed no standard framework with proper guidelines.

Accordingly, its is imperative and timely to develop appropriate measured to reflect accounting and financial reporting recognition of firms human capital investment in a way that all the aspects: human resource expenditure, human asset base of the firm and human capital employees bring in and develop within the firm. In addition, it is also suggested that the financial reporting recognition of human capital investment via qualitative information disclosure need to be standardised and improved providing proper framework with standard guidelines, where the final product is audited before the information is presented to the stakeholders via external financial reporting. Accordingly, the results of the above two analysis provide evidence for challenging the accounting profession (Turner, 2005) demanding to examine its current myopic approach to the provision of decision making information.

The discrepancy between the researchers effort on valuing, accounting for and financial reporting recognition of the human capital investment and the practitioner's effort to make these attempts a reality has mostly been attributable to the involvement of the state government and the regulatory bodies either with the objectives of enhancing the practice or to suppress the development in the fields accounting and financial reporting recognition of human capital investment. However, the type and the intensity of the involvement, and the positive or negative nature of the involvement by the state government and the regulatory bodies have always been different from one country or a region to the other. Moreover, problems of measurements and recognition issues have been recognised as one major difficulty faced by those who work on the accounting for human capital initiatives. The risk of putting people formally in the balance sheet when firms actually do not own their employees have been an increasing concern for most of the recent studies. Therefore,

some projects of development of human capital management and accounting have deliberately ignored the valuation and accounting for human capital. They have restricted and self limited their attempts on firms' ability to understand and reveal the quality and limited effectiveness of the way firms manage their people and how this can be reflected in qualitative sense in the firm annual reports (Stittle, 2005).

A continuing interest in accounting and financial reporting recognition of human capital investment and the broad aspect intellectual capital investment is evidenced in Scandinavian countries such as Denmark and Sweden (Grojer and Johanson, 1996 & 1998; Grojer, 1997; Roslender et al., 2014). Their attempts have covered valuation and accounting for human capital investment as well as reporting frameworks to provide supplementary information on intellectual capital development for systematic and comprehensive work (DATI, 2000). Many of the Scandinavian intellectual capital development initiative projects have been government backed and supported by the legal and the regulatory frameworks such as Danish Ministry of Science Technology and Innovation, Danish Financial Statement Act etc. (Holmen, 2005; KPMG, 2002). As a result, most of the techniques developed have also been penetrated to the real world practice at least in Scandinavian context. In certain instances, these techniques have been proposed as collaborative projects with government of private institutions (Holmen, 2005). While these techniques have already been applied in practical world, it actually is a concern, why these techniques on accounting and financial reporting recognition of human capital have rarely been expanded to the other parts of the world or at least to the rest of the European countries.

As such, comparative to the Scandinavian initiatives, other European countries as well as United Kingdom has been very much lag behind in terms of valuation and accounting and financial reporting recognition of human capital investment. Even though good human capital management is crucial for an organization it was revealed that in general they are under reported in UK. Accounting for people task force was set up in 2003 addressing related issues with the objectives: analysing the current performance measures assessing the investment in human capital; analyse the best practice in human capital reporting and performance measures that could be used by different categories of stakeholders; and to develop a business case for such a report (DTI, 2003 a and b; Roslender et al., 2004; Stittle, 2005). These initiatives are basically aimed at how public and private sector institutions could improve their reporting on human capital management (Roslender et al., 2004). Despite these government initiatives as well as the attempts by researchers and the academics, the professional accounting bodies in UK context said to have had a strong influence against these initiatives and managed even to effectively emasculate the initiatives by Department of Trade and Industry via the Accounting for People taskforce on human capital management (Roslender et al., 2014; Roslender, 2009; Roslender and Stevenson, 2009).

Considering the results and the interpretations as well as the government, political and the regulatory frameworks' involvement for and against human capital management and accounting and financial reporting recognition of human capital investment, it is vital to establish a standard link between the three functional specialisations: human resource management, management accounting including internal audit and financial accounting. It is equally important for the human

resources management people to be financially literate recognising the human resource contribution in firm value creation and for the financial accounting and management accounting people to recognise human resources from human capital perspective opposed to the current cost control perspective. Emphasising on the human capital theory arguments opposed to treating it just as expenditure according to the conventional accounting treatment is certainly capable of eliminating the current myopic approach of 'human resource expenditure is to be minimised to achieve higher book profits'. Ideally this could prevent the human resource budget being the most sensitive when ever firms or industries are in crisis situation.

7.3 LIMITATION TO THE STUDY

The above results have been achieved subject to some limitations to the study. Unavailability of a proper measures conceptualising human capital investment by firms, left the researcher only with the currently available information accounting and financial reporting recognition of human capital investment, which does not exactly reflect firms' investment in human capital. The fact that only the researcher has coded qualitative information disclosed in the annual reports leads to doubt the results on the ground of researcher- bias or observer bias situation. However given the time consuming nature and relatively large number of annual reports to code and the financial constrains has prevented the repetition of the coding process with another researcher. Moreover, collection of qualitative data from large number of annual reports is associated with more problems such as, difficulty of repetition and

errors involved with familiarity and boredom as well as less time on in-depth analysis. The possibility of using computer-aided techniques could also be explored with this regard, even though the meaningfulness of reporting can hardly be captured via these techniques.

7.4 FURTHER RESEARCH AVENUES

A coherent attempt to revise the current accounting treatment on firms investment in human capital considering it as an asset and capital introduced by the employees for the firm while writing off only the expenditure portion in the annual reports. In addition, given the significant role qualitative information play in stakeholder decisions, proposing a comprehensive framework for firms to adopt in financial reporting recognition in human capital investment would as well be inevitable.

Moreover, it is imperative to test the models developed in measuring the human capital and for the accounting and financial reporting recognition of human capital investment from both developed and lower developed countries point of view. An attempt to understand stakeholder perception on the current accounting and financial reporting recognition of human capital investment particularly considering the value relevance of the practice for each category would be a valuable addition to the discipline in proposing new accounting and financial reporting frameworks.

The proposed framework for the financial reporting recognition of human capital information disclosed in the firm annual reports using the balanced scorecard approach could be extended from human capital information to the information disclosures in general as well. Since the framework developed based on balance scorecard framework provides a pictorial presentation, addressing how firm performance is linked with the interests of a number of stakeholder groups, the same approach could be adopted for the empirical analysis of information disclosure in general as well.

REFERENCES

Abhayawansa, S. and Abeysekera, I., (2008). An Explanation of Human Capital Disclosure from the Resource-Based Perspective, Journal of Human Resource Costing & Accounting, Vol. 12, No. 1, pp. 51-64.

Abbott, W. F. and Monsen, R. J., (1979). On the Measurement of Corporate Social Responsibility: Self Reported Disclosure as a Method of Measuring Corporate Social Involvement, Academy of Management Journal, Vol. 22, No. 3, PP. 501-515.

Abdolmohammadi, M. J., (2005). Intellectual Capital Disclosure and Market Capitalization. Journal of Intellectual Capital, Vol. 6, No. 3, pp. 397-416.

Abeysekara, I., (2011). Civil War, Stock Return, and Intellectual Capital Disclosure in Sri Lanka. Advances in Accounting, Vol. 27, No. 2, 331-337.

Abeysekara, I., (2010). The Influence of Board Size on Intellectual Capital Disclosure by Kenyan Listed Firms, Journal of Intellectual Capital, Vol. 11, No. 4, pp. 504-518.

Abeysekera, I., (2008). Motivation Behind Human Capital Disclosure in Annual Reports. Accounting Forum, Vol. 32, No. 1, pp. 16-29.

Abeysekara, I., (2007). Intellectual Capital Reporting between Developing and Developed Nation, Journal of Intellectual Capital, Vol. 8 No. 2, pp.329-345.

Abeysekera, I., (2006). The Project of Intellectual Capital Disclosure: Researching the Research, Journal of Intellectual Capital, Vol. 7, No. 1, pp 61-77.

Abeysekera, I. and Guthrie J., (2005). An Empirical Investigation of Annual Reporting Trends of Intellectual Capital in Sri Lanka, Critical Perspectives on Accounting, Vol. 16, pp. 151-163.

Abeysekera, I. and Guthrie, J., (2004). Human Capital Reporting in a Developing Nation, the British Accounting Review, Vol. 36, pp. 251-268.

ACCA, (2009). Human capital management: An Analysis of Disclosure in UK Reports, UK, The Association of Chartered Certified Accountants.

ADB, (2002). Accounting and Auditing practice in Sri Lanka, Diagnostic Study of Accounting and Auditing Practices in Selected Developing Member Countries, Manila, Asian Development Bank.

ADB, (2002). Diagnostic Study of Accounting and Auditing Practice in Selected Developing Member Countries, Asian Development Bank, Manila.

Aerts, W., Cormier, D. and Magnan, M., (2006). Intra-Industry Imitation in Corporate Environmental Reporting: An International Perspective, Journal of Accounting and Public Policy, Vol. 25, pp. 299-331.

Agoglia, C. P., Doupnik, T. S. and Tsakumis, G.T., (2011). Principles-based Versus Rules-based Accounting Standards: The Influence of Standard Precision and Audit Committee Strength on Financial Reporting Decisions, The Accounting Review, Vol. 86, No. 3, pp. 747-767.

Amir, E. and Lev, B. (1996). Value Relevance of Non-financial Information: The Wireless Communication Industry, Journal of Accounting and Economics, Vol. 22, No.1-3, pp. 3-30.

American Accounting Association, (AAA) (1973). “Report of the Committee on Human Resource Accounting”, The Accounting Review Supplement, pp. 169-185.

An, Y., Davey, H. and Eggleton, I. R. C., (2011). Towards a Comprehensive Theoretical Framework for Voluntary IC Disclosure, Journal of Intellectual Capital, Vol. 2, No. 4, pp. 571-585.

Athanasios, V., Antonios, S. and Despina, G., (2013). Company Characteristics and Human Resource Disclosure in Greese, Procedia Technology, Vol. 8, pp. 112-121.

Ax, C. and Marton, J., (2008). Human Capital Disclosure and Management Practices, Journal of Intellectual Capital, Vol. 9, No. 3, pp. 433-455.

Baker, C. R. and Wallage, P., (2000). The future of financial reporting in Europe: Its role in corporate governance, The International Journal of Accounting, Vol. 35, No. 2, pp. 173-187.

Baltagi, B.H., (2005). Econometric Analysis of Panel Data, Third Edition. Chichester, Wiley.

Barako, D.G., Hancock, P. and Izan, H.Y., (2006). Factors Influencing Voluntary Corporate Disclosure by Kenyan Companies, Corporate Governance, Vol. 14, No. 2, pp. 107-125.

Barney, J. B., (1991). Firm Resources and Sustained Competitive Advantage." Journal of Management, Vol. 17, No. 1, pp. 99-120.

Barney, J. B., (1990). The Debate Between Traditional Management Theory and Organisational Economics: Substantive Differences or Intergroup Conflict?, Academy of Management Review, Vol. 15, 382-393.

Bart, C. K., (2001). Measuring the Mission Effect in Human Intellectual Capital, Journal of Intellectual Capital, Vol. 2, No. 3, pp. 320-330.

Bassi, L. and McMurrer, D., (2005). What to do When People are Your Most Important Asset, Handbook of Business Strategy, pp. 219-224.

Bassi, L. Harrison, P., Ludwig, J. and McMurrer, D., (2004). The Impact of U.S. Firms' Investments in Human Capital on Stock Prices.

Beattie, V., (2005). Moving the Financial Accounting Research Front Forward: The UK Contribution, The British Accounting Review, Vol. 37, pp. 85-114.

Bechara, J. and Van de Ven, A.H., (2011). Triangulating Philosophies of Science to Understand Complex Organisational and Managerial Problems, Philosophy and Organisational Theory Tesearch in Sociology of Organisations, Vol. 32, pp. 343-364.

Becker, B. E., Huselid, M. A., & Ulrich, D. (2001). The HR Scorecard: Linking People, Strategy and Performance. Boston: Harvard Business School Press.

Becker, G. (1964). Human Capital, University of Chicago Press, Chicago.

Becker, G. S., (1962). Investment in Human Capital: A Theoretical Analysis, The Journal of Political Economy, Vol. 70. No. 5, Part 2, pp. 9-49.

Becker, G. S. (1993). Human Capital: A Theoretical and Empirical Analysis With Special Reference to Education (3rd ed.) Chicago, the University of Chicago Press.

Bennis, W. G., (1959). Leadership Theory and Administrative Behaviour: The Problem of Authority, Administrative Science Quarterly, Vol. 4, No. 3, pp. 259-301.

Black, S. E. and Lynch, L. M., (1996). Human Capital Investments and Productivity, The American Economic Review, Vol. 86, No. 2, pp. 263-267.

Blundell, R., Dearden, L., Meghir, C. and Sianesh, B., (1999). Human Capital Investment: The Returns From Education and Training to the Individual the Firm and the Economy, Fiscal Studies, Vol. 20, No. 1, pp. 1-23.

Boedker, C., Guthrie, J. and Cuganesan, S., (2004). The Strategic Significance of Human Capital Reporting in Annual Reporting, Journal of Human Resource Costing and Accounting, Vol. 8 No. 2, pp. 7-22.

Boesso, G. and Kumar, K., (2009). Stakeholder Prioritization and Reporting, Evidence From Italy and the US, Accounts Forum, Vol. 33, pp. 162-175.

Bontis, N., (1999), Managing Organisational Knowledge by Diagnosing Intellectual Capital Framing and Advancing the State of the Field, International Journal of Technology Management, Vol. 18, No. 5, pp. 433-462.

Bontis, N. and Fitzenz, J., (2002), Intellectual Capital ROI a Casual Map of Human Capital Antecedents and Consequences, Journal of Intellectual Capital, Vol. 3, No. 3, pp. 223-247.

Bontis, N., Keaw, W. C. C. and Richardson, S., (2000), Intellectual Capital and Business Performance in Malaysian Industries, Journal of Intellectual Capital, Vol. 1, No. 1, PP. 85-100.

Bontis, N., Dragonetti, N.C., Jakobsen, K. and Roos, G., (1999), The Knowledge Tool Box: A Review of the Tools Available to Measure and Manage Intangible Resources, European Management Journal, vol. 17 no. 4. pp. 391-402.

Booker, J. A. and Harris, J. K., (1980), A Project to Enrich the Study of Financial Reporting, The Accounting Review, Vol. 55, No. 1, pp. 107-110.

Bos, W. and Tarnai, C., (1999). Content Analysis in Empirical Social Research, Educational Research, Vol. 31, No. 8, pp. 659-671.

Botosan, C. A., (1997). Disclosure Level and the Cost of Equity Capital, The Accounting Review, Vol. 72, No. 3, pp. 323-349.

Bouten, L., Everaert, , P., Liedekerke, L. V. and Moor, L. D., (2011). Corporate Social Responsibility Reporting: A Comprehensive Picture?, Accounting Forum, Vol. 35, pp. 187-204.

Brennan, N. and Connel, B., (2000). Intellectual Capital: Current Issues and Policy Implications, Journal of Intellectual Capital, Vol. 1, No. 3, pp. 206-240.

Bronzini, R. and Piselli, P., (2009), Determinants of Long Run Regional Productivity With Geographical Spill Overs: The Role of R&D, Human Capital and Public Infrastructure, Regional Science and Urban Economics, Vol. 39, pp. 187-199.

Brooking, A. (1997). The Management of Intellectual Capital, Long Range Planning, Vol. 30, No. 3, pp. 364-5.

Brooks, K. and Nafukho, F.M., (2006). Human Resource Development, Social Capital, Emotional Intelligence: Any Link to Productivity?, Journal of European Industrial Training, Vol. 30, No. 2, pp. 117-128

Brummet, R. L., Flamholtz, E. G. And Pyle, W. C., (1968). Human Resource Measurement- A Challenge for Accountants, the Accounting Review, Vol. 43, No 2, pp. 217-224.

Bryer, R. A. (1994). Why Marx's Labour theory is Superior to the Marginalist Theory of Value: The Case from Modern Financial Reporting, Critical Perspectives on Accounting, Vol. 5, No. 4, pp. 313-340.

Bukh, P. N., Neilsen, C., Gormsen, P. And Mouritsen, J., (2005). Disclosure of Information on Intellectual Capital in Danish IPO Prospectuses, Accounting Auditing and Accountability Journal, Vol. 18, No. 6, pp 713-732.

Burrell, G. and Morgan, G., (1979). Sociological Paradigms and Organisational Analysis, London, Heinemann.

Burton-Jones, A., (1999). Knowledge Capitalism: Business Work and Learning in The New Economy, Oxford University press.

Bushman, R. M. and Piotroski, J. D., (2006). Financial Reporting Incentives for Conservative Accounting: The Influence of Legal and Political Institutions. Journal of Accounting and Economics, Vol. 42, No. 1-2, pp. 107-148.

Campbell, D. J., (2000). Legitimacy Theory or Managerial Reality Construction? Corporate Social Disclosure in Marks and Spencer plc. Corporate Reports, 1969-1997), Accounting Forum, Vol. 24, No. 1, pp. 80-100.

CBS, (2008). The Sri Lankan Economy, Perceptions/ Claims vs. Reality, Central Bank of Sri Lanka.

Chan, K.H., (2009a). Impact of Intellectual Capital on Organisational Performance: An Empirical Study of the Companies in the Hang Seng Index (Parat 1), The Learning Organisation, Vol. 16, No. 1, pp. 4-21.

Chan, K.H., (2009b). Impact of Intellectual Capital on Organisational Performance: An Empirical Study of the Companies in the Hang Seng Index (Part 2), The Learning Organisation, Vol. 16. No. 1, pp 22-39.

Chan, L. K. C., Lakonishok, J. and Sougiannis, T., (2001). The Stock Market Valuation for Research and Development Expenditure, The Journal of Finance, Vol. 56 No. 6, pp.2431-2456.

Chan S. H., Martin, J. D. and Kensinger, J. W., (1990). Corporate Research and Development Expenditure and Share Value, Journal of Financial Economics, Vol. 26, pp. 255-276.

Chareonsuk, C. and Chansa-ngavej, C. (2008). Intangible Asset Management Framework for Long Term Financial Framework, Industrial Management and Data System Vol. 108, No. 6, pp. 812-823.

Chen, F., Liu, Z. and Kweh, Q. L., (2014). Intellectual Capital and Productivity of Malaysian General Insurers, Economic Modelling, Vol. 36, pp. 413-420.

Chen, M. C., Cheng, S.J. and Hwang, Y. (2005). An Empirical Investigation of The Relationship Between Intellectual Capital and The Firms' Market Value and Financial Performances. Journal of Intellectual Capital. Vol. 6, No. 2, pp. 159-176.

Chen, H.M. and Lin, K.J.,(2004). The Role of Human Capital Cost in Accounting, Journal of Intellectual Capital, Vol. 5, No. 1, pp. 116-130.

Cheng, E. C. M. and Courtenay, S. M. (2006). Board Composition, Regulatory Regime and Voluntary Disclosure, International Journal of Accounting, Vol. 41, No. 3, pp. 262-289.

Chiapello, E. Drechsler, C. and Lebas, M., (2001). The Tableau de Bord, a French Approach to Management Information, Unpublished working paper. http://www.docstoc.com/docs/21473842/The-Tableau-de-Bord-a-French-Approach-to-Management (accessed January 2014).

Christensen, H. B., Lee, E. and Walker, M., (2007). Cross-sectional Variation in The Economic Consequences of International Accounting Harmonization: The Case of Mandatory IFRS Adoption in the UK, the International Journal of Accounting, Vol. 42, No. 4, pp. 341-379.

Clement, R. W., (2005). The Lesson From Stakeholder Theory for US Business Leaders, Business Horizons, Vol. 48, pp. 255-264.

Cohen, G. A. (1979). The Labour Theory of Value and the Concept of Exploitation, Philosophy and Public Affaires, Vol. 8, No. 4, pp. 338-360.

Collett, P. and Hrasky, S. (2005). Voluntary Disclosure of Corporate Governance Practices by Listed Australian Companies, Corporate Governance, Vol.13, No. 2, pp. 188-196.

Cormier, D., Aerts, W., Ledoux, M.J. and Magnan, M., (2009). Attributes of Social and Human Capital Disclosure and Information Asymmetry Between Managers and Investors, Canadian Journal of Administrative Sciences, Vol. 26, No. 1, pp. 71-89.

Cooke, T. E., (1989). Voluntary Corporate Disclosure by Swedish Companies, Journal of International Financial Management and Accounting, Vol. 1, No. 2, pp. 171-195.

Cooper, D. J. and Sherer, M. J., (1984). The Value of Corporate Accounting Reports: Arguments for a Political Economy of Accounting, Accounting Organisations and Society, Vol. 9, No. ¾, pp. 207-232.

Cooper, S. M. and Owen, D. L., (2007). Corporate Social Reporting and Stakeholder Accountability: the Missing Link, Accounting Organisations and Society, Vol 32, pp. 649-667.

Crespi-Cladera, R. and Pascual-Fuster, B (2013). Does The Independence of Independent Directors Matter?, Journal of Corporate Finance. (Accepted Manuscript).

Cuganesan, S., (2006). Reporting Organisational Performance in Managing Human Resources: Intellectual Capital or Stakeholder Perspective. Journal of human Resources Costing and Accounting Vol. 10, No. 3, pp. 164-188.

Daum, J., (2005). French Tableau de Bord: Better Than The Balanced Scorecard?, Der Controling Berater, No. 7, pp. 459-502.

DATI, (2000). A guideline for intellectual capital statements: A key to knowledge management, Copenhagen: Danish Agency for Trade and Industry.

Deng, X., Kang, J. and Low, B. S., (2013). Corporate Social Responsibility and Stakeholder Value Maximisation: Evidence From Mergers, Journal of Financial Economics, Vol. 110, pp. 87-109.

DiMaggio, P. J. and Powell, W.W., (1991). Introduction in W.W. Powell and P.J. DiMaggio (Eds), The New Institutionalism in Organisational Analysis, (pp.1-38), Chicago: The University of Chocago Press.

Dixon, R., Mousa, G. A. and Woodhead, A., (2005). The Role of Environmental Initiatives in Encouraging Companies to Engage in Environmental Reporting, European Management Journal, Vol. 23, No. 6, pp. 702-716.

Donaldson, L., (1990a). The Ethereal Hand: Organisational Economics and Management Theory, Academy of Management Review, Vol. 5, No. 3, pp. 369-381.

Donaldson, L., (1990b). A Rational Basis for Criticism of Organisational Economics: A Reply to Barney, Academy of Management Review, Vol. 15, No. 3, pp. 394-401.

Donaldson, L. and Davis, J., (1991). Stewardship Theory or Agency Theory: CEO Governance and Shareholder Returns, Australian Journal of Management, Vol. 16, No. 1, pp. 49-65.

Donaldson, T. and Preston, L.E. (1995). The Stakeholder Theory of The Corporation: Concepts, Evidence and Implications, Academy of Management Review, Vol. 20, No. 1, pp. 65-91.

Dooley, P. C. (2005). The Labour Theory of Value, London, Routledge.

DTI, (2003a). Accounting For People- Report of the Taskforce on Human Capital Management, London, Department of Trade and Industry.

DTI, (2003b), Accounting For People- Consultation Paper, London, Department of Trade and Industry.

Dumay, J. and Tull, J. (2007). Intellectual Capital Disclosure and Price Sensitive Australian Stock Exchange Announcements", Journal of Intellectual Capital, Vol. 8, No. 2, pp. 236-55.

Edvinsson. L., (1997). Developing Intellectual Capital at Skandia, Long Range Planning, Vol. 30, No. 3, pp. 366-373.

Edvinsson. L., (1996). Developing a Model for Managing Intellectual Capital, European Management Journal, Vol. 14, No. 4, pp. 356-364.

Edvinsson, L. and Malone, M.S., (1997). Intellectual Capital: Realizing Your Company's True Value by Finding Its Hidden Brainpower, Harper Business, New York, NY.

Edvinsson, L. and Sullivan, P., (1996). Developing a Model for Managing Intellectual Capital. European Management Journal, Vol. 14 No 4, pp. 356-364.

Ehie, I. C. and Olibe, K., (2010). The Effect of R & D Investment on Firm Value: An Examination of US Manufacturing and Service Industry, International Journal of Production Economics, Vol. 128, No. 1, pp. 127-135.

Elias, N., (1972). The Effect of Human Asset Statement on The Investment Decision: An Experiment, Journal of Accounting Research, Vol.10, Empirical Research in Accounting, Selected Studies. pp. 215-233.

Elkington, J., (1998). Cannibals With Forks: The Triple Bottom Line of The 21st Century Business, New Society Publishers, Gabriola Island, BC; Stony Creek, CT.

Eng, L. L. and Mak, Y.T., (2003). Corporate Governance and Voluntary Disclosure, Journal of Accounting and Public Policy, Vol. 22, No. 4, pp. 325-345.

Entwistle, G. M. (1999). Exploring the R & D Disclosure Environment, Accounting Horizons, Vol.13. No. 4 pp. 323-341.

Epstein, M. and Monzone, J., (1998). Implementing Corporate Strategy: From Tableaux de Bord to Balanced Scorecards, European Management Journal, Vol. 16 No. 2, pp 190-203.

Epstein, M. J. and Monzone, J., (1997). The Balanced Scorecard and Tableaux de Bord: A Global Perspective on Translating Strategy in to Action, Management Accounting, Vol. 79, No. 2, pp. 22-36

Ernst and Young, (2012). US GAAP versus IFRS The basics. http://www.ey.com/Publication/vwLUAssets/IFRSBasics_BB2435_November2012/$FILE/IFRSBasics_BB2435_November2012.pdf accessed May 2013.

Feeney, A. and Heit, E., (2007). Inductive Reasoning: Experimental Developmental and Computational Approaches, Cambridge University Press.

Financial Reporting Council (FRC), (2010). The UK Corporate Governance Code. London.

Flamholtz, E. G., Kannan-Narasimhan, R. and Bullen, M., (2004). Human Resources Accounting Today: Contributions, Controversies, and Conclusions, Journal of Human Resource Costing and Accounting, Vol. 8, No. 2, pp. 23-37.

Flamholtz, E., (1974). Human Resource Accounting a Review of Theory and Research, The Journal of Management Studies, Vol 11. No. 1, pp. 44-61.

Flamholtz, E. G., (1973). Human Resources Accounting: Measuring Positional Replacement Cost, Human Resource Management, pp. 1-12.

Flamholtz, E., (1972a). Human Resource Accounting: A Review of Theory and Research, Organisational Behaviour Division at the Thirty Second Annual Meeting of The Academy of Management, Minneapolis, Minnesota, (Journal of Management Studies, Vol. 9, No. 1.

Flamholtz, E., (1972b). Towards a Theory of Human Resource Value in Formal Organisation, The Accounting Review, Vol. 47 No 4. pp. 666-678.

Flamholtz, E.G., (1972c). On the Use of Economic Concept of Human Capital in Financial Statements: A Comment, The Accounting Review, Vol. 47 No. 1. pp. 148-152.

Flamholtz, E., (1971). A Model for Human Resource Valuation: A Stochastic Process with Service Rewards, The Accounting Review, Vol 46 No. 2, pp.253-267.

Flamholtz, E., (2005). Conceptualizing and Measuring the Economic Value of Human Capital of the Third Kind Corporate Culture, The Journal of Human Resource Costing and Accounting, Vol. 9, No. 2, pp. 78-93.

Foley, D. K., (2000). Recent Developments in the Labour Theory of Value, Review of Radical Political Economics, Vol. 32, No. 1, pp. 1-39.

Frank, T. M., (1990). The Power of Legitimacy Among Nations, Oxford University Press, New York.

Freeman, R. E., (1984). Strategic Management: A Stakeholder Approach, Marshfield, MA. Pitman Publishing.

Gallhofer, S., Haslam, J. and Walt, S. van der, (2011). Accountability and Transparency in Relation to Human Rights: a Critical Perspective Reflecting

Upon Accounting Corporate Responsibility and Ways Forward in the Context of Globalization, Critical Perspectives on Accounting, Vol. 22, No. 8, pp. 765-780.

Glaser, B. G. and Strauss, A.L., (1967). The Discovery of Grounded Theory: Strategies for Qualitative Research, Chicago, Aldine.

Global Reporting Initiatives (GRI), (2006). Sustainability Reporting Guidelines, Boston: GRI.

Goh, P. C. and Lim, K.P. (2004). Disclosing Intellectual Capital in Company Annual Reports: Evidence from Malaysia. Journal of Intellectual Capital. Vol. 5, No. 3, pp. 500-510.

Gompers, P. A. Ishii, J. L. and Metrick, A., (2003). Corporate Governance and Equity Price, QuarterlyJournal of Economics, Vol. 118, No. 1, pp. 107-155

Gosh, D. and Vogt, A., (2012). Outliers: An Evaluation of Methodologies, Section on Survey Research Methods- JSM, pp. 3455-3460.

Graham, J. W., (1981). An Explanation for The Correlation of Stock of Non-human Capital with Investment in Human Capital, the American Economic Review, Vol. 71, No. 1, pp. 248-255.

Graham, J. R., Harvey, C. R. and Rajgopal, S., (2005). The Economic Implications of Corporate Financial Reporting, Journal of Accounting and Economics, Vol. 40, No. 1-3, pp. 3-73.

Green, J. P., Stark, A. W. and Thomas, H. M., (1996). UK Evidence on The Market Valuation of the Research and Development Expenditure, Journal of Business Finance and Accounting, Vol. 23, No. 2, pp. 191-216.

Grojer , J., (1997). Employee Artefacts on the Balance Sheet: Model Illustration and Implications, Journal of Human Resource Costing and Accounting, Vol. 2, No. 1, pp. 27-53.

Grojer, J. E. and Johanson, U., (1996). Human Resource Costing and Accounting, second ed., Joint Industrial Safety Council, Stockholm.

Grojer, J. E. and Johanson, U., (1998). "Current developments in human resource accounting: reality present, researchers absent", Accounting, Auditing and Accountability Journal, Vol. 11, No. 4, pp. 495-505.

Groot, W., (1999). Productivity Effects of Enterprise Related Training, Applied Economics Letters, Vol. 6, No. 6, Pp. 369-371.

Grove, H.D., Mock, T.J. and Ehrenreich, K.B., (1977). A Review of Human Resource Accounting Measurement Systems From a measurement theory perspective, accounting Organisation and society, Vol. 2, No. 3, pp. 219-236.

Gujarati, D.N., (2004). Basic Econometrics, Fourth Edition, The McGrow-Hill Companies.

Guler, I., Guillen, M. F. and Macpherson, J. M., (2002). Global Competition, Institutions and The Diffusion of Organisational Practice, the International Spread of ISO 9000 Quality Certificates, Administrative Science Quarterly, Vol. 47, No. 2, pp. 207-232.

Guthrie, J. and Petty, R. (2000). Intellectual Capital: Australian Annual Reporting Practices, Journal of Intellectual Capital, Vol. 1, No. 3, pp. 241-251.

Guthrie, J., Petty, R., Yongvanish, K. & Ricceri, F., (2004). Using Content Analysis as a Research Method to Inquire in to Intellectual Capital Reporting, Journal of Intellectual Capital, Vol. 5, No. 2, pp. 282-293.

Guthrie, J., Petty, R., & Ricceri, F., (2006). The Voluntary Reporting of Intellectual Capital: Comparing Evidence From Hong Kong and Australia, Journal of Intellectual Capital, Vol. 7, No. 2, pp. 254-271.

Hair, J.F., Black, W.C., Babin, B.J., & Anderson, R.E., (2010). Multivariate Data Analysis, Seventh Edition, Prentice Hall, Upper Saddle River, New Jersey.

Hausman, J. A., (1978). Specification Tests in Econometrics, Econometrica, Vol. 46, No. 6, pp. 1251-1271.

Heit, E., (2007). What is Induction and Why Study It?, in A. Feeney and E. Heit (Ed), Inductive Reasoning, pp. 1-14, New York, Cambridge University Press.

Henriques, A. and Richardson, J., (2004). The Triple Bottom Line: Does It All Add Up?, London, Earthscan.

Holland, L. and Foo, Y. B., (2003). Differences in Environmental Reporting Practice in the UK and the US: the Legal and Regulatory Context, the British Accounting Review, vol. 35. pp. 1-18.

Holmen, J., (2005). Intellectual Capital Reporting, Management Accounting Quarterly, Vol. 6, No. 4, pp. 1-9.

Holzer, H. J., (1990). The Determinants of Employee Productivity and Earnings, Some New Evidence, Industrial Relations, Vol. 29, No. 3, pp. 403-422.

Hossain, D. M., Khan, A. R. And Yasmin, I., (2004). The Nature of Voluntary Disclosures on Human Resources in the Annual Resources of Bangladeshi Companies, Dhaka University Journal of Business Studies, Vol 25 No. 1, pp. 221-231.

http://www.tim-russell.co.uk/upimages/Employment%20Guide.pdf, A Guide to UK Employment Law, Accessed on March, 2014.

http://www.soxlaw.com/compliance.htm, Sarbanes Oxley Act of 2002 (SOX), accessed on August 2010.

Huang, C. C., Luther, R. and Tayles, M., (2007). An Evidence-Based Taxonomy of Intellectual Capital, Journal of Intellectual Capital, Vol. 8, No. 3, pp. 386-408.

Huselid, M. A., (1995). The Impact of Human Resource Management Practices on Turnover, Productivity and Corporate Financial Performance, Academy of Management Journal, Vol. 38, No. 3, 635-672.

Iatridis, G., (2008). Accounting Disclosure and Firm's Financial Analysis: Evidence From the UK Stock Market, International Review of Financial Analysis, Vol. 17, pp. 219-241.

Irvine, H., (2008). The Global Institutionalization of Financial Reporting, The Case of The United Arab Emirates, Accounting Forum, Vol. 32, pp. 125-142.

Jensen, M.C., (2002). Value Maximization, Stakeholder Theory and The Corporate Objective Function, Business Ethics Quarterly, Vol. 12, No. 2, pp. 235-256.

Jensen, M.C., (2001). Value Maximization, Stakeholder Theory and The Corporate Objective Function, Journal of Applied Corporate Finance, Vol. 14, No. 3, pp. 8-21

Jensen, M. C. and Meckling, W. H., (1976). Theory of the Firm: Managerial Behaviour, Agency Cost and Ownership Structure, Journal of Financial Economics, Vol. 3, No. 4, pp. 305-360.

Johanson, U., Eklov, G., Holmgren, M. and MaÊrtensson, M., (1999). ``Human Resource Costing and Accounting Versus The Balanced Scorecard: a Literature Survey of Experience with the Concepts", Paper Presented at the

International Symposium Measuring Reporting Intellectual Capital: Experiences, Issues, and Prospects, OECD, Amsterdam, June.

Kadapakkam, P., Kumar, P.C. and Riddick, L.A., (1998). The Impact of Cash Flows and Firm Size on the Investment: the International Evidence, Journal of Banking and Finance, Vol. 22, No. 3, pp.293-320.

Kamath, G. B., (2008), Intellectual Capital and Corporate Performance in Indian Pharmaceutical Industry, Journal of Intellectual Capital, Vol. 9, No. 4, pp. 684-704.

Kang, H. H. and Gray, S.J., (2011). Reporting Intangible Assets: Voluntary Disclosure Practice of Top Emerging Market Companies, The International Journal of Accounting, Vol. 46, pp. 402-423.

Kang, H. H. J., (2006). Reporting Intangible Assets: Voluntary Disclosure Practice of the Top Emerging Market Companies, PhD thesis, The University of New South Whales.

Kaplan, R. S. and Norton D.P. (1992). The Balanced Scorecard – Measures that Drives Performances, Harvard Business Review, Vol.70, pp. 71-79.

Kaplan, R. S. and Norton D. P., (2001). Commentary, Transforming The Balanced Scorecard From Performance Measurement to Strategic Management, Part 1, Accounting Horizons, vol.15, No. 1, pp. 87-104.

Kinney, W. and Libby, R., (1999). Research on Credible Financial Reporting 1961-99: The Contribution of Professor Nicholas Dopuch, Journal of Accounting Research, Vol. 37, pp. 1-15.

KPMG, (2002).The Danish Financial Statements Act.

Krippendorff, K., (1980). Content Analysis: an Introduction to Its Methodology, Sage, Beverly Hills.

Kury, K. W., (2007). Decoupled Earnings: and Institutional Perspective of The Consequence of Maximizing Shareholder Value, Accounting Forum, vol.31, pp. 310-383.

Lajili, K. and Zeghal, D., (2005a). A Content Analysis of Risk Management Disclosure in Canadian Annual Reports. Canadian Journal of Administrative Sciences, Vol. 22, No. 2, pp. 125-142.

Lajili, K. and Zeghal, D., (2005b). Labour Cost Voluntary Disclosure and Firm Equity Value: Is Human Capital Information Value Relevant?, Journal of International Accounting, Auditing and Taxation, Vol. 14, No. 2, pp. 121-138.

Lajili, K. and Zeghal, D., (2006). Market Performance Impacts of Human Capital Disclosure, Journal of Accounting and Public Policy, Vol. 25, pp. 171-194.

Lakomski, G. and Evers, L. W., (2011). Analytic Philosophy and Organisational Theory Philosophical Problems and Scientific Solutions, Philosophy and Organisational Theory Research in the Sociology of Organisations, Vol. 32, pp. 23-52.

Laughlin, R., (1995). Methodological Themes: Empirical Research in Accounting: Alternative Approach and a Case for "Middle-Range" Thinking, Journal of Accounting, Auditing and Accountability, Vol. 8, No. 1, pp. 63-87.

Lepak, D. P. and Snell, S. A., (2002). Examining the Human Resource Architecture: The Relationships Among Human Capital Employment and Human Resource Configuration, Journal of Management, Vol. 28, No. 4, pp. 517-543.

Lepak, D. P. and Snell, S. A., (1999). The Human Resource Architecture: Towards a Theory of Human Capital Allocation and Development, Academy of Management Review, Vol. 24, No. 1, pp. 31-45.

Leuz, C and Verrecchia, R. E., (2000). The Economic Consequences of Increased Disclosure, Journal of Accounting Research, Vol. 38, supplement: Studies on Accounting Information and the Economics of the Firm, pp. 91-124.

Leuz, C. and Wysocki, P. D., (2008). Economic Consequences of Financial Reporting and Disclosure Regulation: A Review and Suggestions for Future Research, Available at SSRN: http://ssrn.com/abstract=1105398

Lev, B., (2001). Intangible Management, Measurement and Reporting, Brooking Institute Press, Washington, DC.

Lev, B., (1988). Toward a Theory of Equitable and Efficient Accounting Policy. The Accounting Review, Vol. 63, No. 1. pp. 1-22.

Lev, B. and Schwartz, A. (1971). On the Use of Economic Concept of Human Capital in Financial Statements, The Accounting Review, Vol. 46, No. 01, pp.103-112.

Lev, B. and Schwartz, A. (1972). On the Use of Economic Concept of Human Capital in Financial Statements: A Reply, The Accounting Review, Vol. 47, No. 01, pp.153-154.

Li, J., Mangena, M. and Pike, R., (2012). The Effect of Audit Committee Characteristics on Intellectual Capital Disclosure, The British Accounting Review, Vol. 44, pp. 98-110.

Li, J., Pike, R. and Haniffa, R., (2008). Intellectual Capital Disclosure and Corporate Governance Structure in UK Firms, Accounting and Business Research, Vol. 38, No. 3, pp. 137-159.

Lickert, R. (1971). The Human organisation: Its Management and Value, McGrow-Hill Book Company, New York.

Lin, C. H., Yang, H. L. and Liou, D. Y., (2009). The Impact of Corporate Social Responsibility of Financial Performances: Evidence From Business in Taiwan, Technology in Society, Vol. 31, pp. 56-63.

Lindblom, C.K., (1994). The Implications of Organisational Legitimacy for Corporate Social Performance and Disclosure, Paper Presented at the Critical Perspectives on Accounting Conference, New York, NY.

Lindblom, C. E., (1982). Another State of Mind, American Political Science Review, Vol. 76, No. 1, pp. 9-21.

Llewellyn, S., (2003). What counts as theory in Qualitative management and accounting research? Introducing five levels of theorizing, Accounting Auditing and Accountability Journal, Vol. 16, No. 4, pp. 662-708.

Long, M. S. and Malitz, I. B., (1985). Investment Patterns and Financial Leverage, Friedman, B.M., (Ed), Corporate Capital Structures in the United States, (pp. 325-252), Chicago, The University of Chicago Press.

Longo, M. and Mura, M., (2007). A Multidimensional Measure of Employee Intangibles: A Managerial Implementation Rules, Management Research News, Vol. 30, No. 8, pp. 548-569.

Maher, A., (1996). Measuring Human Resource Value: An Analysis Based on the Hotel Industry, Journal of Human Resource Costing and Accounting, vol. 1 No. 1, pp. 15-33.

Mahoney, L. and Roberts, R. W., (2007). Corporate Social Performance, Financial Performance and Institutional Ownership in Canadian firms, Accounting Forum, Vol. 31, pp. 233-253.

Mangena, M and Tauringana, V., (2007). Disclosure Corporate Governance and Foreign Share Ownership on the Zimbabwe Stock Exchange, Journal of

International Financial Management and Accounting, Vol. 18, No. 2, pp. 53-85.

Maranto-Vargas, D. and Rangel, R. G. T., (2007). Development of Internal Resources and Capabilities as Source of Differentiation of SME Under Increased Global Competition: a Field Study in Mexico, Technological Forecasting and Social Change, Vol. 74, No. 1, pp. 90-99.

March, J. G., (1987), Ambiguity and Accounting: The Exclusive Link Between Information and Decision Making, Accounting Organisations and Society, Vol. 12, No. 2, pp. 153-167.

Marr, B. and Schiuma, G., (2003). Business Performance Measurement- Past, Present and Future, Management Decision, Vol. 41, No. 8, pp. 680-687.

Marr, B, Schiuma, G. and Neely, A., (2004). Dynamics of Value Creation: Mapping Your Intellectual Performance Drivers, Journal of Intellectual Capital, Vol. 5, No. 2, pp. 312-325.

Marx, K. and Engels, F., (1948). The Communist Manifesto, International Publishers, New York.

McDaniel, L., Martin, R. D. and Maines, L. A., (2002). Evaluating Financial Reporting Quality: The Effect of Financial Expertise vs. Financial Literacy, The Accounting Review, Vol. 77, pp. 139-167.

McGregor, D., (1960). The Human Side of Enterprise, New york, 21. Pp. 166-171.

Mendez, C. F., Garcia, R. A. and Rodriguez, E. F., (2011). Corporate Governance and Executive Pay in the Spanish Market, The Spanish Review of Financial Economics, Vol. 9, pp. 55-68.

Meyer, J. W. and Rowan, B., (1977). Institutionalised Organisations: Formal Structure as Myth and Ceremony, American Journal of Sociology, Vol. 83, No. 2, pp. 340-363.

Michalisin, M.D. (2001). Validity of Annual Reports Assertions About Innovativeness: Am Empirical Investigation. Journal of Business Research, Vol. 53 pp. 151-161.

Mills, D. L. and Gardner, M. J., (1984). Financial Profiles and the Disclosure of Expenditure for Social Responsible Purpose, Journal of Business Research, December, 1984, Pp. 407-424.

Minonne, C. and Turner, G., (2009). Evaluating Knowledge Management Performances, Electronic Journal of Knowledge Management, Vol. 7, No. 5, pp. 583-592.

Modigliani, F. and Miller, M.H., (1958), The Cost of Capital, Corporation Finance and the Theory of Investment, The American Economic Review, Vol. 48, No. 3, pp. 261-297.

Montagna, P., (1991). Accounting Elites and Accounting Theory, Accounting Organisations and Society, Vol. 16, No. 1, pp. 93-99.

Morse, W. j., (1973). A Note on The Relationship Between Human Asset and The Human Capital, The Accounting Review, Vol. 48, No. 3, pp. 589-593.

Muranda, Z., (2006). Financial Distress and Corporate Governance in Zimbabwean Banks, Corporate Governance, Vol. 6, No. 5, pp. 643-654.

Murthy, V. and Abeysekara, I., (2007). Human Capital Value Creation Practice of Software and Service Exporter Firms in India, Journal of Human Resource Costing and Accounting. Vol. 11. No. 2, pp. 84-103.

Muth, M. and Donaldson, L., (1998). Stewardship Theory and Board Structure: A Contingency Approach, Corporate Governance: an International Review, Vol. 6, pp. 5-28.

Myers, M. S. and Flowers, V. S. (1974). A Framework Measuring Human Asset, California Management Review, Vol. 16, No. 4, pp. 5-16.

Nafukho, F. m., Hairston, N. R. and Brooks, K., (2004). Human Capital Theory: Implications for Human Resource Development, Human Resource Development International, Vol. 7, No. 4, pp. 545-551.

Nazari, J. A. and Herremans, I. M., (2007). Extended VAIC Model: Measuring Intellectual Capital Components, Journal of Intellectual Capital, Vol. 8, No. 4, pp. 595- 609.

Nerdrum, L. and Erikson, T., (2001). Intellectual Capital: a Human Capital Perspective, Journal of Intellectual Capital, Vol. 2, No. 2, pp. 127-135.

Ness, K.E. and Mirza, A.M. (1991). Corporate Social Disclosure: a Note on a Test of Agency Theory. British Accounting Review vol. 23 pp. 211-217.

Ng, D. S., (1978). An Information Economics Analysis of Financial Reporting and External Auditing, The Accounting Review, Vol. 53, No. 4, pp. 910-920.

Ntim, C. G., Opong, K. K., Danbolt, J. and Thomas, D. A., (2012). Voluntary Corporate Governance Disclosure by Post- Apartheid South African Corporation, Journal of Applied Accounting Researches, Vol. 13, No. 2, PP. 122-144.

Olsson, B., (2001). Annual Reporting Practice: Information About Human Resources in Corporate Annual Reports in Major Swedish Companies, Journal of Human Resources Costing and Accounting, Vol. 6, No. 1, pp. 39-52.

Olsson, B., (1999). Measuring Personnel Through Human Resource Accounting Reports: A Procedure for Management Learning. The Hospital Sector in Northwest Stockholm, Journal of Human Resource Costing and Accounting, Vol. 4, No. 1, pp. 49-56.

Ordóñez de Pablos, P., (2002). "Evidence of Intellectual Capital Measurement From Asia, Europe and the Middle East", Journal of Intellectual Capital, Vol. 3, No. 3, pp. 287-302.

Parum, E., (2005). Does Disclosure on Corporate Governance Lead to Openness and Transparency in How Companies are Managed?, Corporate Governance: An International Review, Vol. 13, No. 5, pp. 702-709.

Pedrini, M., (2007), Human Papital Convergences in Intellectual Capital and Sustainability Reports, Journal of Intellectual Capital, Vol. 8, No. 2, pp. 346-366.

Peter, C. and Hrasky, S., (2005). Voluntary Disclosure of Corporate Governance Practices by Listed Australian Companies, Corporate Governance, Vol. 13, No. 2, pp. 188-196.

Petersen, C and Plenborg, T. (2006). Voluntary Disclosure and Information Asymmetry in Denmark, Journal of International Accounting, Auditing and Taxation, Vol. 15, pp. 127-149.

Petty, R. and Guthrie, J. (2000). Intellectual Capital Literature Review: Measurement, Reporting and Management", Journal of Intellectual Capital, Vol. 1, No. 2, pp. 155-76.

Pezet, A., (2009). The history of the French tableau de bord (1885-1975) evidence from the archives, accounting business and financial history, Vol. 19, No. 2, pp. 103-125.

Phillips, R., Freeman, R. E. & Wicks, A. C., (2003). What stakeholder theory is not, Business Ethics Quarterly, Vol. 13, No. 4, pp. 479-502.

Pike, S., Fernstrom, L. and Ross, G., (2005), Intellectual capital: Management approach in ICS Ltd, Journal of Intellectual Capital, Vol. 6, No. 4, pp. 489-509.

Popov, A., (2013). Credit Constraints and Investment in Human Capital: Training Evidence from Transition Economies, Journal of Financial Intermediation, (article in press).

Poole, W., (2010). Causes and Consequences of the Financial Crisis of 2007-2009. Harvard Journal of Law & Public Policy, Vol. *33*, pp. 421.

Pulic, A., (2000). VAIC^{TM} – An Accounting Tool for Intellectual Capital Management, International Journal of Technology Management, Vol. 20, Nos. 5/6/7/8, pp. 207-214.

Pulic, A., (1998). Measuring the Performance of Intellectual Performance in Knowledge Economy, The 2nd McMaster World Congress on Measuring and Managing IntellectualCapital by the Austrian Team for Intellectual Potential.

Raffournier, B., (1995). The Determinants of Voluntary Financial Disclosure by Swiss Listed Companies, the European Accounting Review, Vol. 4, No. 2, pp. 261-280.

Rahaman, A. S., Lawrence, S. and Roper, J., (2004). Social and Environmental Reporting at the VRA: Institutionalised Legitimacy or Legitimation Crisis?, Critical Perspectives on Accounting, Vol. 15, pp. 35-56.

Rezaee, Z., (2005). Causes, Consequences, and Deterrence of Financial Statement Frauds, Critical Perspectives on Accounting, Vol. 16, pp. 277.

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, Vol. 4, No. 2, pp. 215-226.

Riahi-belkaoui, A., (2000). Accounting theory 4th Edition, Business Press Thomson Learning, Cornwall, UK.

Rizk, R., Dixon, R and Woodhead, A. (2008). Corporate Social and Environmental Reporting: a Survey of Disclosure Practice in Egypt, Social Responsibility Journal, Vol.4 No. 3 pp 306-323.

Roberts, R. W., (1992). Determinants of Corporate Social Responsibility Disclosure: An Application of Stakeholder Theory, Accounting Organisations and Society, Vol. 17, No. 6, pp 595-612.

Roos, G., Ross, J.,Edvinson, L. and Dragonetti, N.C. (1997). Intellectual Capital – Navigating in the New Business Landscape, New York University Press, New York. NY.

Roslender, R., Marks, A. and Stevenson, J., (2014). Damned if you do Damned if you don't: Conflicting perspectives on the virtues of accounting for people, Critical perspectives of accounting, Article in Press.

Roslender, R., (2009). So Tell me again … Just Why Would You Want to Account for People?, Journal of Human Resource Costing and Accounting, Vol. 13, No. 2, pp. 143-153.

Roslender, R. (1997). Accounting for the Worth of Employees: Is the Discipline Finally Ready to Respond to the Challenge, Journal of Human Resource Costing and Accounting, Vol 2, No. 1, pp 9-26.

Roslender, R. and Dyson, J.R. (1992). Accounting for the Worth of Employees: a New Look at an Old Problem", British Accounting Review, Vol. 24, pp. 311-329.

Roslender, R. and Fincham, R. (2001). Thinking Critically About Intellectual Capital Accounting, Accounting Auditing and Accountability Journal, Vol. 14, No.4, pp 383-398.

Roslender, R. and Fincham, R. (2004). Intellectual Capital Accounting in the UK: A field study perspective, Accounting Auditing and Accountability journal, Vol. 17, No. 2, pp. 178-209.

Roslender, R and Stevenson, J., (2009). Accounting for people: A real Step Forward or More Case of Wishing and Hoping?, Critical Perspectives of Accounting, Vol. 20, pp. 855-869.

Roslender, R., Stevenson, J. and Fincham, R. (2004). The UK Human Capital Management Initiative: A Review of the Accounting for People Report, Journal of Human Resource Costing and Accounting, Vol. 8, No. 1, pp. 7-19.

Royal, C. and O'Donnell, L., (2008). Emerging Human Capital Analytics for Investment Processes, Journal of Intellectual Capital, Vol. 9, No. 3, pp. 367-379.

Saam, N. J., (2007). Asymmetry in Information Versus Asymmetry in Power: Implicit Assumptions of Agency Theory? The Journal of Socio-Economics. Vol. 36, pp. 825-840.

Samaha, K., Dahawy, K., Hussainey, K. and Stapleton, P., (2012). The Extent of Corporate Governance Disclosure and its Determinants in a Developing Market: the Case of Egypt, Advances in Accounting, Incorporating Advances in International Accounting, Vol. 28, pp. 168-178.

Saunders, M., Lewis, P. and Thornhill, A., (2007). Research Methods for Business Students, 4th Edition, England, Prentice Hall.

Schman, M.C., (1995). Managing Legitimacy: Strategic and Institutional Approach, Academy of Management Journal, Vol. 20, No. 3, pp. 571-610.

Schwan, E. S. (1976). The Effect of Human Resource Accounting Data on Financial Decisions: An Empirical Test, Accounting, Organisations and Society, Vol. 1, No. 2-3, pp. 219-237.

Schultz, T. W., (1961). Investment in Human Capital, The American Economic Review, Vol. 51, No. 1, pp. 1-17.

Sharabati, A. A., Jawad, S. N. and Bontis, N., (2010). Intellectual Capital and Business Performance in the Pharmaceutical Sector in Jordan, Management Decision, Vol. 48, No. 01, pp. 105-131.

Sihotang, P. and Winata, A., (2008). The Intellectual Capital Disclosure of Technology Driven Companies: Evidence from Indonesia, International Journal Learning and Intellectual Capital, Vol. 5, No. 1, pp. 63-82.

Sikka, P., (2011). Accounting for Human Rights: the Challenge of Globalization and Foreign Investment Agreements, Critical Perspectives on Accounting, Vol. 22, No. 8, pp. 811-827.

Smith, J van der L., Adhikari, A and Tondkar, R.H. (2005). Exploring Differences in Social Disclosure Internationally: A Stakeholder Perspective, Journal of Accounting and Public Policy, Vol. 24. pp. 123-151.

Sonnier , B. M., Carson, K. D. and Carson, P. P., (2007). Accounting for Intellectual Capital: the Relationship Between Profitability and Disclosure, the Journal of Applied Management and Entrepreneurship, Vol. 12, No. 2, pp. 3-14.

Soumaya, H., (2012). The Effect of the Debt, Firm Size and Liquidity on Investment - Cash Flow Sensitivity, International Journal of Accounting and Financial Reporting, Vol. 2, No. 2, PP. 1-16.

Steen, A., Welch, D. and McCormack, D., (2011). Conflicting Conceptualization of Human Resource Accounting, Journal of Human Resource Costing and Accounting, Vol. 15, No. 4, pp. 299-312.

Stewart, T. A. (1997). Intellectual Capital, the New Wealth of Organisations. London: Nicholas Brealey.

Stittle, J., (2004). UK Corporate Reporting of Human Capital: A Regulatory Failure to Evolve, Business and Society review, Vol. 109, No. 3, pp. 311-337.

Striukova, L., Unerman, J. and Guthrie, J., (2008). Corporate Reporting of Intellectual Capital: Evidence from UK Companies, The British Accounting Review, Vol. 40, No. 4, pp. 297-313.

Subbarao, A.V. and Zeghal, D., (1997). Human Resource Information Disclosure in Annual Reports: An International Comparison, Journal of Human Resource Costing and Accounting, Vol. 2, No. 2, pp 53-73.

Sunder, S., (1988). Political Economy of Accounting Standards, Journal of Accounting Literature, Vol. 7, pp. 31-41.

Sunder, S., (2005). Minimising our Manners: Accounting as Social Norms, The British Accounting Review, Vol. 37, pp. 367-387.

Sveiby, K.E. (1997). The Intangible Assets Monitor, Journal of Human Resource Costing and Accounting, Vol. 2, No. 1, pp.73-97.

Sveiby, K. E., (2010). Methods for Measuring Intangible Assets, Accessed on 01/02/14, http://www.sveiby.com/articles/IntangibleMethods.htm

Sweetland, S. R., (1996). Human Capital Theory: Foundations of a Field of Inquiry, Review of Educational Research, Vol. 66, No. 3, pp. 341-359.

Tan, H. P., Plowman, D. and Hancock, P. (2008). The Evolving Research on Intellectual Capital, Journal of Intellectual Capital, Vol. 9, No. 4, pp. 595-608.

Tan, H. P., Plowman, D. and Hancock, P., (2007). Intellectual Capital and Financial Returns of Companies, Journal of Intellectual Capital, Vol. 8, No. 1, pp. 76-95.

Tinker, A. M., (1980). Towards a Political Economy of Accounting: an Empirical Illustration of the Cambridge Controversies, Accounting, Organisations and Society. Vol. 5, No. 1, pp. 147-160.

Tinker, A., (1984). Theories of the State and the State of Accounting: Economic Reductionism and Political Voluntarism in Accounting Regulation Theory, Journal of Accounting and Public Policy, Vol. 3, No. 1, pp. 55-74.

Tinker, T., (1988). Panglossian Accounting Theories, the Science of Apologising in Style, Accounting Organisation and Society, Vol. 13, No. 2, pp. 165-189.

Turner, G., (1996). Human Resource Accounting-Whim or Wisdom, Journal of Human Resource Costing and Accounting, Vol.1, No. 1, pp. 63-73.

Turner, G., (2005). Accounting for Human Resources Quo Vadis, International Journal of Environmental, Cultural, Economic and Social Sustainability, Vol. 1, No. 3, pp. 11-17.

Ulliman, A., (1985). Data in Search of a Theory: A Critical Examination of the Relationship Among Social Performances, Social Disclosure and Economic Performances, Academy of Management Review, Vol. 10, No. 3, pp. 540-558.

Verrecchia, R. E., (2001). Essays on Disclosure, Journal of Accounting and Economics, Vol. 32, pp. 97-180.

Villacorta, W.V., (2006). Human Person in Theravada Buddhism and Islam: Implications for Governance in South East Asia, (Malinvaud, E. and Glendan, M. A. Ed), Conceptualization of the Person in Social Sciences, Vatican City.

Vithana, V.K.G. (2009). MBA Thesis, University of Colombo, Sri Lanka, Unpublished Documents.

Vithana, V. K. G. and Gunaratne, P. S. M., (2009). Attributes Affect the Level of Human Capital Reporting and Its Impact on Stock Returns: A Study in Colombo Stock Exchange, 4th International Research Conference in Management and Finance. University of Colombo. Sri Lanka.

Wang, K., Seven O, Claiborne, M.C. (2008). Determinants and Consequence of Voluntary Disclosure in an Emerging Market: Evidence from China, Journal of International Accounting Auditing and Taxation, Vol. 17. pp. 14-30.

Watson, C. J., (1990). Multivariate Distributional Properties, Outliers and Transformation of Financial Ratios, The Accounting Review, Vol. 65, No. 3, pp. 682-695.

Wilkes, F. M., Samuels, J. M. and Greenfield, S.M., (1996). Investment Decision Making in UK Manufacturing Industry, Management Decision, Vol. 34, No. 4, pp. 62-71.

Williams, S. M., (2004). Downsizing- Intellectual Capital Performance Anorexia or Enhancement?, The Learning Organisation, Vol. 11, No. 4-5, pp. 368-379.

Williams, S. M., (2001). Is Intellectual Capital Performance and Disclosure Practice Related?, Journal of Intellectual Capital, Vol. 2, No. 3, pp. 192-203.

Williams, S. M., (1999). Voluntary Environmental and Social Accounting Disclosure Practices in the East Pacific Region: an International Empirical Test of Political Economy Theory, The International Journal of Accounting, Vol. 34, No. 2, pp. 209-238.

Williamson, O. E., (1985). The Economic Institutions of Capitalism, New York, Free Press.

Wilmshurst, T.D. and Frost, G.R., (2000). Corporate Environmental Reporting: a Test of Legitimacy Theory. Accounting, Auditing and Accountability Journal Vol. 13, No. 1, pp. 10–26.

Wintermantel, R.E. and Mattimore, K. L., (1997). In The Changing World of Human Resources: Matching Measures to Mission, Human Resource Management, Vol. 36, No. 3, pp. 337-342.

White, G., Lee, A. and Tower, G., (2007). Drivers of Voluntary Intellectual Capital Disclosure in Listed Bio Technology Companies, Journal of Intellectual Capital, Vol. 8, No. 3, pp. 517-537.

Woodcock, J. and Whiting, R. H., (2009). Intellectual Capital Disclosure by Australian Companies, AFAANZ Conference, Adelaide, Australia.

Wyatt, A., (2005). Accounting Recognition of Intangible Assets: Theory and Evidence on Economic Determinants, The Accounting Review, Vol. 80, No. 3, pp. 967-1003.

Youndt , M. A. and Snell, S. A., (2004). Human Resource Configurations, Intellectual Capital and Organisational Performance, Journal of Managerial Issues, Vol. 16, No. 3, pp. 337-360.

Zhou, H., (2007). Auditing Standards Increased Accounting Disclosure and Information Asymmetry: Evidence From an Emerging Market, Journal of Accounting and Public Policy. Vol. 26, pp. 584-620.

Zula, K. J. and Chermack, T. J., (2007). Human Capital Planning: A Review of Literature and Implications for Human Resource Development, Human Resource Development Review, Vol. 6, No. 3, pp. 245-262.

APPENDIX

Appendix 1

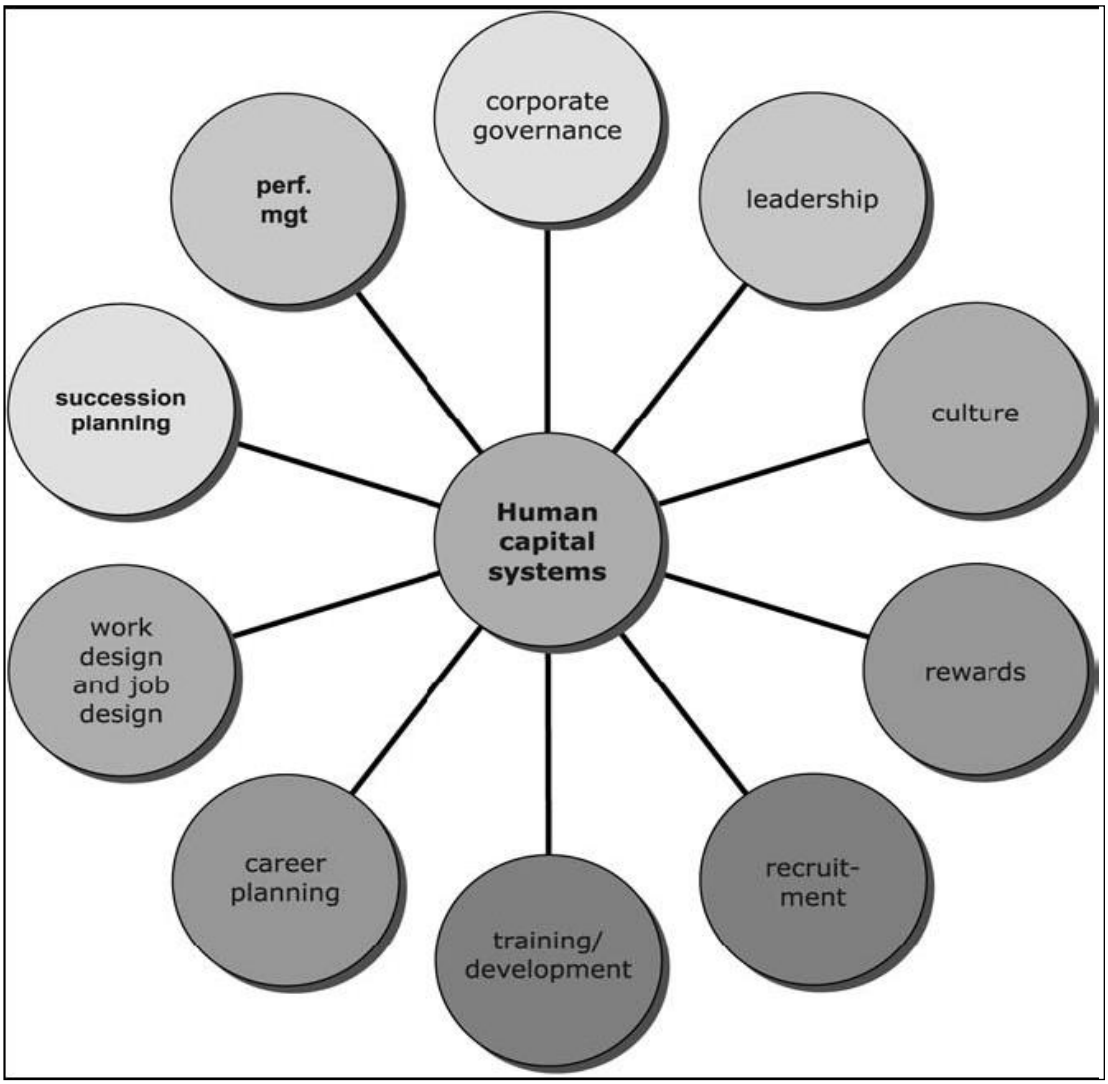
Human capital disclosure items under different empirical studies

I. Human Capital Attribute Categorization

Human Capital Category	Human Capital Attribute
Training and development	Know how Vocational qualification Career development Training programmes
Entrepreneurial skills	
Equity issues	Race, Gender Religion Disable issues
Employee safety	
Employee relations	Union activity Employee thanked Employee featured Employee involvement with the community
Employee welfare	Employee compensation plan Executive compensation plan Employee benefit Employee share ownership plan Employee share option ownership plan
Employee related measurements	Value added statements Employee numbers Professional experience Educational level Expert seniority Age of employee

Source: Abeysekera, I. and Guthrie, J., (2004). Human Capital Reporting in a Developing Nation, the British Accounting Review, Vol. 36, pp. 251-268.
Abeysekera, I. and Guthrie J., (2005). An Empirical Investigation of Annual Reporting Trends of Intellectual Capital in Sri Lanka, Critical Perspectives on Accounting, Vol. 16, pp. 151-163.

II. The human capital wheel



Source: Royal, C. and O'Donnell, L., (2008). Emerging human capital analytics for investment processes, Journal of Intellectual Capital, Vol. 9, No. 3, pp. 367-379.

III. Human Capital Parameters

Disclosure theme	Disclosure item
A. Staff breakdown	1. Staff breakdown by age
	2. Staff breakdown by seniority
	3. Staff breakdown by gender
	4. Staff breakdown by nationality
	5. Staff breakdown by department
	6. Staff breakdown by level of education
B. Staff health and job satisfaction	7. Rate of staff turnover
	8. Comments on changes in number of employees
	9. Staff health and safety
	10. Absence
	11. Staff interview
	12. Work environment
C. Education and training	13. Statement of policy on competence development programs
	14. Education and training expenses/employee
	15. Employee expenses/employee
D. Recruitment, careers and compensation	16. Recruitment policies
	17. Job rotation opportunities
	18. Career opportunities
	19. Remuneration system
	20. Employee incentive program
	21. Policy on fringe benefits
E. Revenues and employees	22. Dependence on key personnel
	23. Revenues/employee
	24. Value added/employee

Source: Ax, C. and Marton, J., (2008). Human Capital Disclosure and Management Practices, Journal of Intellectual Capital, Vol. 9, No. 3, pp. 433-455.

IV. Empirical Grouping of Human Capital

Employee capabilities	**Employee development and retention**	**Employee behaviour**
1. Employees work related knowledge	1. Employee training	1. Employees' motivation
2. Employees work related competencies	2. Key employee turnover	2. Employees job satisfaction
3. Employee's know-how and expertise	3. Employee recruitment costs	3. Employees' loyalty
4. Employees creativity innovativeness	4. Intensive programme / compensation scheme	4. Leadership qualities of managers
	5. Employee profitability / revenue per employee etc.	
	6. Employees' previous job experience	

Source: Huang, C. C. Luther, R. and Tayles, M., (2007). An Evidence-based taxonomy of intellectual capital, Journal of Intellectual capital, Vol. 8, No. 3, pp. 386-408.

APPENDIX 2: RESEARCH SAMPLE AND INDUSTRY CLASSIFICATION

Research sample for the year 2009

Firm Name	Industry	Industry Classification	Firm Size Market capitalization in (£Mn)
HSBC HLDGS	Banks	Banking and financial	123361.5242
ROYAL DUTCH SHELL	Oil & gas producers	Non banking and financial	115977.45
BP	Oil & gas producers	Non banking and financial	113056.04
UNILEVER	Food producers	Non banking and financial	25616.216
STANDARD CHARTERD	Banks	Banking and financial	31667.255
BRITISH AMERICAN TOBACCO	Tobacco	Non banking and financial	40260.1993
XSTRATA PLC	Mining	Non banking and financial	32744.4185
GLAXOSMITHKLINE	Pharmaceutical and biotechnology	Non banking and financial	69147.517
ASTRAZENECA PLC	Pharmaceutical and biotechnology	Non banking and financial	42202.6208
BG GROUP	Oil & gas producers	Non banking and financial	40328.4305
ANGLO AMERICAN	Mining	Non banking and financial	35690.1423
ROLLS ROYCE GROUP	Aerospace and defence	Non banking and financial	8953.755
PEARSON	Media	Non banking and financial	7168.21
LLOYDS BANK GROUP PLC	Banks	Banking and financial	32226.9471
BARCLEYS	Banks	Banking and financial	31441.8881
RECKITT BENCKISER GROUP PLC	Household goods	Non banking and financial	23772.5235
IMPERIAL TOBACCO GROUP	Tobacco	Non banking and financial	19927.08
ROYAL BANK OF SCOTLAND GROUP PLC	Banks	Banking and financial	16553
PRUDENTIAL	Life insurance	Banking and financial	16151.78
CENTRICA PLC	Gas and water multiutilities	Non banking and financial	14331.3348
BAE SYATEMS	Aerospace and defence	Non banking and financial	12674.3471

EURASIAN NATURAL RESOURCES CORP	Mining	Non banking and financial	11782.91
AVIVA	Life insurance	Banking and financial	10898.287
TULLOW OIL PLC	Oil & gas producers	Non banking and financial	10440.79
ANTOFAGASTA	Mining	Non banking and financial	9779.6984
VODAFONE GROUP	Mobile telecommunication	Non banking and financial	75628.22
RIO TINTO	Mining	Non banking and financial	51774.5982
TESCO	Food and drug retailers	Non banking and financial	33687.1648
BHP BILLITON	Mining	Non banking and financial	44029.8005
SABMILLER	Beverages	Non banking and financial	28658.6015
DIAGEO	Beverages	Non banking and financial	27302.8775
NATIONAL GRID	Gas and water multiutilities	Non banking and financial	16619.63135
SCOTTISH AND SOUTHERN ENERGY	Electricity	Non banking and financial	10685.9075
BT GROUP	Fixed line communication	Non banking and financial	10439.5874
BRITISH SKY BROADCASTNG GROUP	Media	Non banking and financial	9850.9754
COMPASS GROUP	Travel and leisure	Non banking and financial	8284.2533
WPP PLC	Media	Non banking and financial	7670.548
MORRISON(WM.) SUPERMARKETS	Food and drug retailers	Non banking and financial	7294.8714
VEDANTA RESOURCES	Mining	Non banking and financial	7123.6154
ASSOCIATED BRITISH FOODS	Food producers	Non banking and financial	6510.24
MARK AND SPENCER GROUP	General retailers	Non banking and financial	6377.64
EXPERIAN PLC	Support services	Non banking and financial	6274.8582
REED ELSEVIER	Media	Non banking and financial	6201.2773
KYZAKHMYS	Mining	Non banking and financial	7123.6154
SAINSBURY (J)PLC	Food and drug retailers	Non banking and financial	5975.9802
OLD MUTUAL	Life insurance	Banking and financial	5807.6787
FRESNILLO PLC	Mining	Non banking and financial	5679.9084
SMITH & NEPHEW	Health care equipment	Non banking and financial	5676.61
CRH	Construction and materials	Non banking and financial	13872.7076

Research sample for the year 2008

Firm Name	Industry	Industry Classification	Firm Size Market capitalization in (£Mn)
HSBC HLDGS	Banks	Banking and financial	79471.0644
ROYAL DUTCH SHELL	Oil & gas producers	Non banking and financial	110923.0483
BP	Oil & gas producers	Non banking and financial	99112.4601
UNILEVER	Food producers	Non banking and financial	20284.8573
STANDARD CHARTERD	Banks	Banking and financial	16524.4321
BRITISH AMERICAN TOBACCO	Tobacco	Non banking and financial	36290.8683
XSTRATA PLC	Mining	Non banking and financial	6218.668
GLAXOSMITHKLINE	Pharmaceutical and biotechnology	Non banking and financial	67030.3902
ASTRAZENECA PLC	Pharmaceutical and biotechnology	Non banking and financial	40964.8424
BG GROUP	Oil & gas producers	Non banking and financial	32243.4454
ANGLO AMERICAN	Mining	Non banking and financial	20499.2448
ROLLS ROYCE GROUP	Aerospace and defence	Non banking and financial	6146.6504
PEARSON	Media	Non banking and financial	5156.9276
LLOYDS BANK GROUP PLC	Banks	Banking and financial	7452.4095
BARCLEYS	Banks	Banking and financial	12840.0982
RECKITT BENCKISER GROUP PLC	Household goods	Non banking and financial	18416.7773
IMPERIAL TOBACCO GROUP	Tobacco	Non banking and financial	18808.7258
ROYAL BANK OF SCOTLAND GROUP PLC	Banks	Banking and financial	19538.0027
PRUDENTIAL	Life insurance	Banking and financial	10367.7011
CENTRICA PLC	Gas and water multiutilities	Non banking and financial	13561.4908
BAE SYATEMS	Aerospace and defence	Non banking and financial	13284.6002
AVIVA	Life insurance	Banking and financial	10362.2427
TULLOW OIL PLC	Oil & gas producers	Non banking and financial	4728.6487

VODAFONE GROUP	Mobile telecommunication	Non banking and financial	73154.6436
RIO TINTO	Mining	Non banking and financial	14922.2209
TESCO	Food and drug retailers	Non banking and financial	28334.9934
BHP BILLITON	Mining	Non banking and financial	28558.6776
SABMILLER	Beverages	Non banking and financial	17402.7206
DIAGEO	Beverages	Non banking and financial	24154.1781
NATIONAL GRID	Gas and water multiutilities	Non banking and financial	16742.0145
SCOTTISH AND SOUTHERN ENERGY	Electricity	Non banking and financial	10594.5523
BT GROUP	Fixed line communication	Non banking and financial	10455.05346
BRITISH SKY BROADCASTNG GROUP	Media	Non banking and financial	8413.6445
COMPASS GROUP	Travel and leisure	Non banking and financial	6401.1301
WPP PLC	Media	Non banking and financial	5065.4564
MORRISON(WM.) SUPERMARKETS	Food and drug retailers	Non banking and financial	7521.35757
SAINSBURY (J)PLC	Food and drug retailers	Non banking and financial	5705.8917
ASSOCIATED BRITISH FOODS	Food producers	Non banking and financial	5781.6
SHIRE PLC	Pharmaceutical and biotechnology	Non banking and financial	5660.54
RSA INSURANCE GROUP PLC	Nonlife insurance	Banking and financial	4571.62
REED ELSEVIER	Media	Non banking and financial	5573.2
CRH	Construction and materials	Non banking and financial	8727.4106
LEGAL & GENERAL GROUP	Life insurance	Banking and financial	4567.1469
CAPITA GROUP	Support services	Non banking and financial	4546.0378
EXPERIAN PLC	Support services	Non banking and financial	4407.7053
STANDARD LIFE PLC	Life insurance	Banking and financial	4390.2173

Research sample for the year 2007

Firm Name	Industry	Industry Classification	Firm Size Market capitalization in (£Mn)
HSBC HLDGS	Banks	Banking and financial	99573.75005
ROYAL DUTCH SHELL	Oil & gas producers	Non banking and financial	134376.3158
BP	Oil & gas producers	Non banking and financial	116722.5174
UNILEVER	Food producers	Non banking and financial	24758.055
STANDARD CHARTERD	Banks	Banking and financial	25801.41702
CRH	Construction and materials	Non banking and financial	9091.3897
BRITISH AMERICAN TOBACCO	Tobacco	Non banking and financial	40264.5991
XSTRATA PLC	Mining	Non banking and financial	34494.1757
ALLIED IRISH BANK PLC	Banks	Banking and financial	9842.2865
MAN GROUP	General financial	Banking and financial	9749.9156
LEGAL & GENERAL GROUP	Life insurance	Banking and financial	8405.3956
GLAXOSMITHKLINE	Pharmaceutical and biotechnology	Non banking and financial	71305.1532
ASTRAZENECA PLC	Pharmaceutical and biotechnology	Non banking and financial	32017.4971
BG GROUP	Oil & gas producers	Non banking and financial	38663.8831
ANGLO AMERICAN	Mining	Non banking and financial	40826.4941
ROLLS ROYCE GROUP	Aerospace and defence	Non banking and financial	10468.823
LLOYDS BANK GROUP PLC	Banks	Banking and financial	26574.5946
BARCLEYS	Banks	Banking and financial	32975.8665
RECKITT BENCKISER GROUP PLC	Household goods	Non banking and financial	20852.9734
IMPERIAL TOBACCO GROUP	Tobacco	Non banking and financial	18381.7169
ROYAL BANK OF SCOTLAND GROUP PLC	Banks	Banking and financial	44741.317
PRUDENTIAL	Life insurance	Banking and financial	17514.7288

CENTRICA PLC	Gas and water multiutilities	Non banking and financial	13165.6862
BAE SYATEMS	Aerospace and defence	Non banking and financial	17468.1836
EURASIAN NATURAL RESOURCES CORP	Mining	Non banking and financial	8241.6
AVIVA	Life insurance	Banking and financial	17463.778
VODAFONE GROUP	Mobile telecommunication	Non banking and financial	98837.7127
RIO TINTO	Mining	Non banking and financial	53249.2942
TESCO	Food and drug retailers	Non banking and financial	37547.5621
BHP BILLITON	Mining	Non banking and financial	35131.4184
SABMILLER	Beverages	Non banking and financial	21188.5231
DIAGEO	Beverages	Non banking and financial	28326.5144
NATIONAL GRID	Gas and water multiutilities	Non banking and financial	21690.247
SCOTTISH AND SOUTHERN ENERGY	Electricity	Non banking and financial	14021.28
BT GROUP	Fixed line communication	Non banking and financial	22026.0375
BRITISH SKY BROADCASTNG GROUP	Media	Non banking and financial	10850.0957
MORRISON(WM.) SUPERMARKETS	Food and drug retailers	Non banking and financial	8641.8453
MARK AND SPENCER GROUP	General retailers	Non banking and financial	9514.294
REED ELSEVIER	Media	Non banking and financial	8654.057
OLD MUTUAL	Life insurance	Banking and financial	9120.4153

Research sample for the year 2006

Firm Name	Industry	Industry Classification	Firm Size Market capitalization in (£Mn)
HSBC HLDGS	Banks	Banking and financial	106791.58
ROYAL DUTCH SHELL	Oil & gas producers	Non banking and financial	117078.16
BP	Oil & gas producers	Non banking and financial	110754.5
UNILEVER	Food producers	Non banking and financial	18706.09
STANDARD CHARTERD	Banks	Banking and financial	20588.41
CRH	Construction and materials	Non banking and financial	11030.96
BRITISH AMERICAN TOBACCO	Tobacco	Non banking and financial	29598.13
XSTRATA PLC	Mining	Non banking and financial	23964.74
ALLIED IRISH BANK PLC	Banks	Banking and financial	12958.55
MAN GROUP	General financial	Banking and financial	9840.36
LEGAL & GENERAL GROUP	Life insurance	Banking and financial	10212.24
GLAXOSMITHKLINE	Pharmaceutical and biotechnology	Non banking and financial	78131.02
SAINSBURY (J)PLC	Food and drug retailers	Non banking and financial	7642.19
LAND SECURITIES GROUP	Real estate	Non banking and financial	10803.03
ASTRAZENECA PLC	Pharmaceutical and biotechnology	Non banking and financial	42557.86
BG GROUP	Oil & gas producers	Non banking and financial	23741.69
ANGLO AMERICAN	Mining	Non banking and financial	36931.36
ROLLS ROYCE GROUP	Aerospace and defence	Non banking and financial	7872.47
LLOYDS BANK GROUP PLC	Banks	Banking and financial	32176.65
BARCLEYS	Banks	Banking and financial	47239.09
RECKITT BENCKISER GROUP PLC	Household goods	Non banking and financial	16878.23
IMPERIAL TOBACCO GROUP	Tobacco	Non banking and financial	13880.96
ROYAL BANK OF SCOTLAND GROUP PLC	Banks	Banking and financial	63032.8

PRUDENTIAL	Life insurance	Banking and financial	16961.86
CENTRICA PLC	Gas and water multiutilities	Non banking and financial	12862.3
BAE SYATEMS	Aerospace and defence	Non banking and financial	13578.49
OLD MUTUAL	Life insurance	Banking and financial	9565.29
AVIVA	Life insurance	Banking and financial	20915.36
VODAFONE GROUP	Mobile telecommunication	Non banking and financial	74470.37
RIO TINTO	Mining	Non banking and financial	28218.57
TESCO	Food and drug retailers	Non banking and financial	32079.61
BHP BILLITON	Mining	Non banking and financial	23044.21
SABMILLER	Beverages	Non banking and financial	17582.28
BANK OF IRELAND (GOVERNOR)	Banks	Banking and financial	11237.69
NATIONAL GRID	Gas and water multiutilities	Non banking and financial	19896.48
SCOTTISH AND SOUTHERN ENERGY	Electricity	Non banking and financial	13302.24
BT GROUP	Fixed line communication	Non banking and financial	25085.31
BRITISH SKY BROADCASTNG GROUP	Media	Non banking and financial	9256.8
BRITISH LAND CO	Real estate	Non banking and financial	8881.14
MARK AND SPENCER GROUP	General retailers	Non banking and financial	12074.98

Research sample for the year 2005

Firm Name	Industry	Industry Classification	Firm Size Market capitalization in (£Mn)
HSBC HLDGS	Banks	Banking and financial	105112.55
ROYAL DUTCH SHELL	Oil & gas producers	Non banking and financial	122655.99
BP	Oil & gas producers	Non banking and financial	128497.27
UNILEVER	Food producers	Non banking and financial	16744.1
STANDARD CHARTERD	Banks	Banking and financial	16982.57
CRH	Construction and materials	Non banking and financial	8817.18
BRITISH AMERICAN TOBACCO	Tobacco	Non banking and financial	27618.14
XSTRATA PLC	Mining	Non banking and financial	8588.43
ALLIED IRISH BANK PLC	Banks	Banking and financial	10594.97
LEGAL & GENERAL GROUP	Life insurance	Banking and financial	7910.43
GLAXOSMITHKLINE	Pharmaceutical and biotechnology	Non banking and financial	86310.76
ASTRAZENECA PLC	Pharmaceutical and biotechnology	Non banking and financial	45236.41
BG GROUP	Oil & gas producers	Non banking and financial	20305.78
ANGLO AMERICAN	Mining	Non banking and financial	29340.92
LLOYDS BANK GROUP PLC	Banks	Banking and financial	27181.29
BARCLEYS	Banks	Banking and financial	39538.47
RECKITT BENCKISER GROUP PLC	Household goods	Non banking and financial	13883.35
IMPERIAL TOBACCO GROUP	Tobacco	Non banking and financial	12408.45
ROYAL BANK OF SCOTLAND GROUP PLC	Banks	Banking and financial	55642.81
PRUDENTIAL	Life insurance	Banking and financial	13336.32
CENTRICA PLC	Gas and water multiutilities	Non banking and financial	9341.15
BAE SYATEMS	Aerospace and defence	Non banking and financial	12255.94
AVIVA	Life insurance	Banking and financial	16670.66

VODAFONE GROUP	Mobile telecommunication	Non banking and financial	78165.85
RIO TINTO	Mining	Non banking and financial	28244.33
TESCO	Food and drug retailers	Non banking and financial	26035.13
BHP BILLITON	Mining	Non banking and financial	23433.57
SABMILLER	Beverages	Non banking and financial	15876.43
BANK OF IRELAND (GOVERNOR)	Banks	Banking and financial	8697.82
NATIONAL GRID	Gas and water multiutilities	Non banking and financial	15422.49
SCOTTISH AND SOUTHERN ENERGY	Electricity	Non banking and financial	8679.84
BT GROUP	Fixed line communication	Non banking and financial	18980.34
BRITISH SKY BROADCASTNG GROUP	Media	Non banking and financial	9144.53
MARK AND SPENCER GROUP	General retailers	Non banking and financial	10256.09
WPP PLC	Media	Non banking and financial	7955.67