

**IMPACT OF HUMAN CAPITAL DEVELOPMENT ON THE PERFORMANCE
OF GHANAIAN ROAD CONTRACTORS.**

By

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DECLARATION

I hereby declare that this submission is my own work towards the Master of Science in Construction Management and that, to the best of my knowledge, it contains no material previously published by another person nor material which has been accepted for the award of any other degree of the University, except where due acknowledgement has been made in the text.

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May the almighty God richly bless you all.

DEDICATION

This study is dedicated to my beautiful wife, and lovely children.

ABSTRACT

The palpable contribution of Human Capital Development to the growth of an economy cannot be overstated. The Construction industry provides infrastructure that supports the other sectors of the economy. Unfortunately, the industry is saddled with numerous challenges varying from internal weaknesses to external threats that affect and influence its performance. The success of any organisation and by extension any industry depends on the human capital available. The construction industry has been identified to lack human capital militating against the delivery of quality of products expected of them. The surge of foreign contractors further dictates that the local contractors need to raise their standards if they need to remain in operation. The study was aimed at assessing the impact of human capital development on performance of road projects in Ghanaian construction industry. The research focused on Class A2B2 Ghanaian road contractors and their performance on feeder roads projects in the Ashanti Region of Ghana. A questionnaire survey approach involving 21 professionals in various road construction companies was used. The questionnaire sought to elicit response from the sample by adopting close ended questions and the use of the Likert scale. Subsequently, the response data was analysed using descriptive statistics, relative importance index and cross tabulation to estimate the relationship between the variables. The findings revealed that orientation of new employees was a common practice in most surveyed companies towards human capital development. The remaining activities such as Periodic on the job training, Performance appraisals, and Sponsorship training programmes among others were not deemed to be significant. Project performance was also examined against Time, Cost and Quality. Whereas most projects were completed on time, these projects mostly exceeded the budgeted cost leading to cost overruns. Lack of financial resources, Lack of central development and regulatory agency, Cost of Human Capital Development and

High employee mobility were identified as the critical challenges to human capital development. Thus the study re-echoed the need for a central development and regulatory agency to enforce the improvement of skills, knowledge and professional development in the Ghanaian construction industry. The limitation of the study included the use of a small sample size due to the research focus.

Keywords: Human capital, development, construction industry, road contractors.

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CHAPTER ONE

INTRODUCTION

1.1 Background of the study

In developing countries, the construction industry may account for anywhere between 1.8 and 11 per cent of GDP (Wells, 2001). The industry also provides the infrastructure that supports other sectors of the economy. Thus, construction plays an important role that goes beyond its share of national output in the development strategy of any country or region. However, construction as an industry often faces many difficulties ranging from internal weaknesses to external threats that affect and influence its performance (Ofori, 2000). In both developing and developed countries, according to Jayawardane and Gunawardena, (1998) these weaknesses and difficulties are usually compounded by the lack of skilled and qualified operatives which often results in cost and time overruns, as well as quality shortfalls.

Other symptoms of the challenges besetting the industry that could stem from lack of quality skilled operatives include avoidable rework, waste, idle resources, accidents, claims, disputes and bankruptcies (Kumaraswamy, 1997). More so, Rowings et al., (1996) argued that many of the problems faced by the industry arise from a need to maintain a skilled and competitive workforce. It is also noted that productivity and quality levels are dependent on the performance of construction workers at all levels. Upgrading the knowledge and skills of all the workers in the industry, including crafts people are therefore required to improve productivity and quality of work (Kumaraswamy, 1997).

Skill deficiency makes it difficult for contractors to deliver the quality of products that more discerning customers require. This is an obvious growing problem in developing countries, particularly those with a significant group of middle and upper class clients. In

many developed countries, there has been a shift in recent decades away from traditional craft methods of building “in situ”, to the production of components in factories and their subsequent assembly on site. There has also been a move towards a greater use of plant and machinery in building and in civil engineering.

Even in developed countries, increased mechanization and prefabrication does not provide a real alternative to raising the level of skills. This is partly because there are limits to the extent to which skilled labour can be replaced by machines and also because new technologies require new skills and can fail if there is inadequate training (Gann and Senker, 1998). The importation of skilled workers is generally regarded as a more appropriate short term solution to the skills crisis.

Construction has the ability to “absorb the excluded” (de Souza, 2000). It provides employment for those with little education or skill, many of them from the poorer sections of society. Surveys of construction workers in a number of Indian cities revealed that they are predominantly young, from the lower castes and poorly educated (Vaid, 1999; Anand, 2000). A significant proportion is illiterate: 69 per cent of the workforce in Delhi, 56 per cent in Pune, 40 per cent in Mumbai and the entire workforce in Hyderabad and Visakhapatnam were found to have had no schooling (Vaid, 1999). The need for the development of a skilled craft workforce for construction industries of developing countries has been acknowledged (Chen, 1998; Jayawardane and Gunawardena, 1998).

Human capital development remains a challenging issue in the current Ghanaian economy, and the built environment is no exception. With growing number of small to medium-size enterprise’s (SME’s) springing up in the construction industry, it becomes progressively challenging if not difficult for authorities to control the level of skills and training of the country’s construction personnel. In addition to this is a lack of skills at management level where a lack or scarcity of skilled project managers often has

substantial consequences for building projects. There is the need for skilled employees at all levels of the construction sector's workforce. Although management skills are an imperative area, the industry needs to spend in the training from the lowest level all the way to the highest, because increased safety and the alleviation of related risks are dependent on a well-educated and skilled workforce. Circumstances are rendered substantially more complicated by the fact that there is often a lack of continuity in employment in this part of the sector, meaning that employees simply do not spend enough time with the company to receive appropriate training. At a more senior level, a lack of skilled project managers is often responsible for delays in the issuing of public tenders, as well as the delay and abandonment of commissioned projects. Quality project managers are essential to the company's performance. Whether it be saving money, reducing risk or earning greater return on investment.

The construction industry needs many more skilled staff and our colleges need industry support and interventions to ensure that the courses offered are relevant and up-to-date. In most developing countries construction skills are still mainly acquired through an informal apprenticeship system. In the Philippines, according to Yuson, (2001), an estimated 95 percent of construction workers acquire their skills in this way. In Egypt 85 per cent of craftsmen are trained through traditional apprenticeships (Assaad, 1993), and a similar situation prevails in Brazil, India, Kenya and Mexico. Vocational training schools do exist in most countries, but many workers and contractors see formal training as unnecessary expense rather than an investment. They can only be persuaded to undergo training if they are paid for lost time.

However, informal training has limitations, notably a restricted learning opportunity (learning by doing), a narrow and static range of skills and the difficulty of instruction in new techniques. In many African countries the informal apprenticeship system is not

well developed and the master craftsmen who do the training may themselves have very limited skills. Another problem, noted in Malaysia, is that the passing on of skills through informal apprenticeship is often kept within the family, clan or tribe, and when circumstances dictate that skills should be transferred to “outsiders” there may be some dilution, with not all of the skills passed on (Abdul-Aziz, 2001)

The informal method of skill acquisition can come under particular strain when there is a sudden and/or sustained increase in construction activity, or when there is pressure from clients for better quality buildings or more rapid completion. These situations commonly arise during the process of economic growth and social change, as economies industrialize and incomes begin to rise, such as is now happening in the newly industrializing countries (ILO, 2001).

1.2 Problem Statement

Human capital is the backbone of the success in every organisation. Mahroum (2007) suggested that human capital management is about three key capacities; the capacity to develop talent, the capacity to deploy talent, and the capacity to continuously attract talent from elsewhere. Collectively, these three capacities form the backbone of any company's human capital competitiveness.

Lack of human capital development makes it difficult for contractors to deliver the quality of products that more discerning customers require. Currently in Ghana, the demand from clients for higher quality building is also causing concern amongst contractors about lack of skills and should lead to a new interest in training. Again, the influx of foreign contractors who are setting higher quality standards (with many high-rise buildings and other complex roads and civil works) which means that local contractors may have no choice but to raise their standards and quality of work. It is in

this regard that, this dissertation seeks to look into the impact of human capital development among Ghanaian road contractors and challenges faced in the development of human capital.

1.3 Aim

The aim of the project is to assess the impact of human capital development on the performance of road contractors in Ghana.

1.4 Objectives

The research was based on the following objectives.

1. To determine the link between human capital development and firm's success.
2. To evaluate human capital development among Ghanaian road contractors and its impact on their performance.
3. To identify challenges to human capital development among road contractors in Ghana.

1.5 Justification

The study presented empirical evidence of the impact of human capital development on a firm's performance in the construction industry. This provided a profound opportunity for road construction companies to develop the required strategy to improve on their performance. The findings of the research would also equip construction companies in the area of challenges faced in human capital development. Finally, the study is a contribution to the wide range of literature and scholarly works in the field of studies and research as far as human capital development is concerned. It therefore provided the

framework and set the stage for further empirical studies to be conducted into the human capital development in Ghanaian construction industry.

1.6 Methodology

This research involved the use of desktop study to gather secondary data. Through the desktop study pertinent literature in the area of human capital development and its impact on a company's performance was identified. Primary data was collected through a well-structured questionnaire to be administered to contractors and their employees. The questionnaire seeks to elucidate answers from the respondents by adopting a close ended questions and the use of the Likert scale. Data was analysed using descriptive statistics. An analytical tool to estimate relationship between variables such as descriptive statistics, relative index and cross tabulation was adopted to find the relationship between performance and human capital development.

1.7 Scope of the Study

This study delved into human capital development of local construction organizations in Ghana, and the research was focus on Class A2B2 Ghanaian road contractors and their performance on feeder roads projects in the Ashanti Region of Ghana. These classes of contractors have been chosen because; the classification places on them some responsibility to own some equipment as well as the employment of key personnel during the execution of their construction contracts. Firm's performance was viewed in terms of financial and non-financial performance. The study was limited to only financial performance of the firms.

1.8 Organisation of the Study

The research was arranged into five chapters. Chapter One (1) provide background introduction of the study and explained the problem at hand; the aim and objectives as well as the scope of the study. Chapter Two (2) presented the literature review of human capital development and skills improvement in the construction industry in Ghana and their impact on service delivery to prospective clients. Research methodology was laid in Chapter Three (3) by providing concrete considerations for conducting quantitative and qualitative case study. The chapter also underlined the research design and methodology that was used to gather and analyse data towards the achievement of the study objectives. The fourth (4th) Chapter focussed on analysis of the data from questionnaires. Discussion of the key results that emanated from the analysis of the data was also a vital exercise in this chapter. Chapter Five (5) was the last chapter in the study and focussed mainly on drawing of conclusion and recommendations base on the research objectives.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews literature on human capital development and its impact on a firm performance. The various components of human capital development are presented. Issues relating to challenges present in developing human capital are also reviewed.

2.2 Meaning of Human Capital

Human capital development is the process of helping people to acquire expertise. In an organizational context, it is the process by which organizations help their employees in a continuous and planned way in order to: acquire or sharpen the abilities required to perform various functions associated with their present or expected future roles; develop their general skills as individuals, discover and utilize their inner potential for their own and/or organizational development purposes; develop an organizational culture in which supervisor subordinate relationships, teamwork and collaboration among sub-units are strong and contribute to the professional well-being, motivation, and pride of employees.

The theory of human capital is rooted from the field of macroeconomic development theory (Schultz, 1993). Becker's (1993) classic book, *Human Capital: A Theoretical and Empirical Analysis* with special reference to education, illustrates this domain. Becker argues that there are different kinds of capitals that include schooling, a computer training course, expenditures on medical care. And in fact, lectures on the virtues of punctuality and honesty are capital too. In the true sense, they improve health, raise earnings, or add to a person's appreciation of literature over a lifetime. From the perspective of Classical Economic Theory, human capital considers labour as a commodity that can be traded in terms of purchase and sale. This classical theory very

much focuses on the exploitation of labour by capital. However, unlike the meaning traditionally associated with the term labour, human capital refers to the knowledge, expertise, and skill one accumulates through education and training. Emphasizing the social and economic importance of human capital theory, Becker (1993) noted the most valuable of all capital is that investment in human being. Becker distinguishes firm-specific human capitals from general-purpose human capital. Examples of firm-specific human capital include expertise obtained through education and training in management information systems, accounting procedures, or other expertise specific to a particular firm. General-purpose human capital is knowledge gained through education and training in areas of value to a variety of firms such as generic skills in human resource development. Regardless of the application, Becker considers education and training to be the most important investment in human capital.

2.3 The Concept of Human Capital Development

There are three main components of ‘human capital’ — early ability (whether acquired or innate); qualifications and knowledge acquired through formal education; and skills, competencies and expertise acquired through training on the job. The concept of human capital arose from a recognition that an individual’s or a firm’s decision to invest in human capital (i.e. undertake or finance more education or training) is similar to decisions about other types of investments undertaken by individuals or firms. Human capital investments involve an initial cost (tuition and training course fees, forgone earnings while at school and reduced wages and productivity during the training period) which the individual or firm hopes to gain a return on in the future (for example, through increased earnings or higher firm productivity). As with investments in physical capital, this human capital investment will only be undertaken by the wealth maximising

individual or firm if the expected return from the investment (or 'net internal rate of return') is greater than the market rate of interest.

2.4 Human Capital Development Components

Jayagopal (1988) proposed a comprehensive framework for human resource development program, comprised upon four major areas with nineteen functions under them and also suggest a dense network of interconnections between these functions. That framework was thrashed and most necessary components are only discussed in detail.

2.4.1 Training and Development

The two terms are quite identical to each other, but they are not the same in meaning. Training is a learning process that aims to permanently improve the ability and behavior of the employees by enabling them to acquire new skill, knowledge and attitude for more efficient performance. Which includes: identification of training needs; developing suitable training programmes; providing requisite job skills and knowledge to employees; evaluating the effectiveness of training programmes. Training is considered fundamentally important to human capital development. It could be described as the vehicle that takes organization to their destination within a stipulated time frame. Development is the growth or realization of a person's ability, through conscious or unconscious learning. Development programs usually include phases of planned study and experience, and are usually supported by a coaching or counselling facility. Development occurs when a gain in experience is effectively combined with the conceptual understanding that can illustrate it, giving increased confidence both to act and to perceive how such action relates to its context (Bolton, 1995).

According to Becker (1993), there are three types of training or knowledge, which are directly related to rate of return and human capital. Becker specified these trainings or knowledge as investments in human capital. These three types of training or knowledge (Becker, 1993) are: on-the-job training- “learning new skills and perfecting old ones while on the job. Broken down into two types of training; general training- those skills which are “useful in many firms besides those providing it”; specific training- “training that has no effect on the productivity of trainees that would be useful in other firms; schooling- “an institution specializing in the production of training, as distinct from a firm that offers training in conjunction with the production of goods”; and other knowledge- any other information which a person obtains to increase their command of their economic situation.

On-the-job training is intended to improve old skills and provide new skills while employed by a firm. These skills are either transferable or specific. On-the-job training is provided by a firm and utilized to increase the outputs of the firm and to increase the income of the individual. This type of training is valued through the time and effort of the trainees, the “teaching provided by others, and the equipment and materials used. These are costs that are incurred from reducing current production in order to increase future production (Becker, 1993). On-the-training time periods can vary greatly as more time is spent on an “intern than a machine operator” (Becker, 1993). General training provides transferable skills to the worker. These types of skills are rarely costly to the firm – most of the trainees bare the cost of general training and reap the benefits of the returns. Employees pay for the general on-the-job training by receiving wages below what they could receive elsewhere. For example, a machinist trained in the military receives lower wages than we would in the competitive labour market; however he finds his skill has value in steel or aircraft firms, and a doctor in residency at one hospital finds

his skills are highly transferable to other hospitals or private practice in the future. Most general on-the-job training presumably increases the future marginal productivity of the workers in the firm providing the training and in other firms (Becker, 1993, p. 34).

Specific training refers to training provided by a firm that has limited transferability and only increases productivity within the contextual setting. For example, when a firm hires new employees- many times, they are orientated to the culture, specific policies and procedures, and other processes to familiar the new employee with their organization. This type of training is specific because the knowledge acquired raises productivity in the firm providing the knowledge than in other firms. Some specific training may not be useful in a single firm or in most firms, but in a set of firms defined by a product, type of work, or geographical location (Becker, 1993). For example, French legal training would not be very beneficial in the United States, but it would be very useful in France (Becker, 1993).

School training (schooling) is completed off the job and at an institution that specializes in either one skill or multiple skills. Schools are often substitutions for on-the job training at a firm. This is evidence by the shift in training programs from the firm to the school such as legal apprenticeships to law school, and on-the-job engineering experience to engineering schools (Becker, 1993). Most training programs develop on-the-job than transfer to formal institutions because industry usually sees the value of the training much before schools. Most schooling costs are absorbed by the student in order to reap the benefits of the returns later from higher wages from specialized skill sets. Training of employees results in increased productivity in any organization. The technological growth of any nation depends on the bulk of trained human resources available. John F. Kennedy, as reported by Gary (2001), once said, “Manpower is the basic resource, the indispensable means of correcting other resources to mankind’s use

and benefit. How well we train, develop, and employ the human skill is fundamental in deciding how we will accomplish as organizations. The manner in which we do this will profoundly depend on the kind of nation we have.’’

According to Becker (p.53, 1993), workers have the ability to acquire “other knowledge” from many sources. Other knowledge has the same ability to increase worker wages as on-the-job training, specific and general training, as well as schooling. Information about the prices charged by different sellers would enable a person to buy from the cheapest, thereby raising his command over resources; information about the wages offered by different firms would enable him to work for the firm paying the highest wage

Gary Becker (p. 44, 1993,) claims, “One of the most influential theoretical concepts in human capital analysis is the distinction between general and specific training or knowledge”. The distinction helps explain why workers with highly specific skills are less likely to quit their jobs and are the last to be laid off during business downturns. It also explains why most promotions are made from within a firm rather than through hiring (Becker, p. 44, 1993). Becker has established the rationale for firms to provide highly specific training to their workers. This type of training reaps benefits for the firm through higher productivity and for the worker through higher wages.

2.4.2 Job Rotation

The distribution of responsibilities it is suggested will result in specialization. However, to be able to utilize their specialization in the best possible way, the work-tasks should be rotated among the employees so as to broaden their field of specialization as well as their knowledge about the organization's operation as a whole. Therefore, once a year the work-tasks should be rotated among the various employees depending upon their qualifications and suitability to perform the new work-task.

2.4.3 Career Planning and Development

The concept of career planning emerged in the USA in the 1970s, and became popular. It encouraged employees to analyse and assess their ambitions and provide them with the information about a company's career opportunities. It focuses on generating an awareness of strengths and weaknesses among employees and at organization. Without development of people in the organization, the organization cannot prosper. The General Electric Company (GEC) in USA has brought out the 'Career Dimensions' work books. The four areas where career planning program can benefit a company are;

- They maintain a positive relation with employees.
- They help to avoid mismatches between what an employee wants and what a company needs and can offer.
- They provide a way of identifying opportunities for continuous career growth.
- They improve the utilization of professional and managerial staff.

2.5 Challenges to Human Capital Development within the Construction Industry

2.5.1 Lack of financial resources

The Ghanaian construction industry is rife with a lot of problems. Among these are inability to secure working capital, perennial problem of arrears in payments and low level of consultancy fees (Government of the Republic of Ghana 2000). This predicament creates foreign the idea of embarking on human capital development and thwarts the development of technical support for consultancy firms in Ghana.

2.5.2 Lack of central development and regulatory agency

Fugar et al., (2013) identified that there is no central agency with legislative backbone to promote and enforce the advancement of skills, experience and professionalism in the Ghanaian construction industry. They advanced that there is no compulsion on firms and contractors to undertake continual development of their employees. This has partly led to the poor performance on projects in areas such cost, quality and productivity. Ofori (2001) confirm this stating that a high percentage of construction projects undertaken in Ghana overshoot the cost and time limits set by the parties. It is in this regard that calls for a Construction Development Board for Ghana is relevant and urgent, following successful examples in other countries: the Building Construction Authority (BCA) of Singapore and the Construction Development Boards (CIDB) of Malaysia and South Africa (Fugar et al., 2013).

2.5.3 Lack of appreciation of the role of human capital in organizational performance

Some managers do not place value on the importance of human capital development as the means for reinventing organizations to be competitive and proactive in a highly competitive and ever-changing economic environment (Fugar et al., 2013). In such environment, human capital development is not factored into the policy and structure of the company. This has somewhat contributed to the non-sustainability and non-effectiveness of such local enterprises.

2.5.4 Cost of human capital development

Fisher et al., (2003) advanced that besides being one of the most important human resource management functions, Human capital development is also one of the most costly. Arguably it involves investment of time and financial resources with long-term benefits. Most owners of construction firms are more interested in immediate benefits than long-term returns. Thus, such enterprises are not normally inclined to invest in human capital development. Furthermore, insufficient and erratic flow of jobs coupled with irregular payment for work done by construction clients has increased the unwillingness of construction firms in Ghana to spend in human capital development (Sambasivan and Soon, 2007).

2.5.5 Macho-nature and low-tech of the industry

Fugar *et al.*, (2013) explain that Ghanaian construction industry, like others in developing countries, is labour intensive and many of the activities on construction projects are physical in nature and cannot be effectively learned in the classroom. This has contributed to the less value placed on formal training or education by some managers (Loosemore et al., 2003).

2.5.6 Slowness to change

The construction industry is slow to transformation; old construction procedures and materials are still been used therefore making human capital development apparently inappropriate; For example, in 2007, PMC Global Incorporated of the USA started the production of pozzolana cement to reduce the cost and perennial shortages in cement supplies in Ghana. Pozzolana cement is the product of 30 years of extensive research by the Building and Road Research Institute (BRRI) of the Council for Scientific and

Industrial Research. However, because of low patronage, the company was reported to be on the brink of folding up (Business, 2011). This is just one example of how sluggish the Ghanaian construction industry is in embracing modernisation. Consequently, little prospect or motivation is available to train employees in new technologies and procedures.

2.5.7 High employee mobility

High mobility of construction employees is a major impediment for training and development. Trained workforces are easily poached by other companies through the use of attractive wages and other benefits. Consequently, no employer is willing to train employees who become easy 'preys' for their competitors. It is unappealing for contractors to train employees because with a better motivation a contractor can attract trained personnel from other companies. The consequence of this, according to Loosemore et al., (2003) is a training stalemate. Furthermore, these itinerant employees fail to cultivate any loyalty to their companies thus further negating the need to provide training to staff. Paradoxically, many research studies have concluded that one of the ways to reduce mobility is by training the employees. Because training engenders commitment of employees and committed employees remain in the organisations for longer periods (Brum, n.d).

2.5.8 Low level of education

Most Ghanaian construction site employees have low level of education. Studies in the industry especially in the area of job satisfaction and motivation have revealed a relatively high percentage of employees whose educational level is not above Junior High School or its equivalent. Indeed, some artisans were found not to have had any

formal education (Fugar and Salam, 2007; Oduro-Owusu, 2010). As a result, any human capital development strategy must include general skill training, such as, reading and writing. But it is unlikely that employers would be willing to invest their training budgets in general training which may not have direct impact to their current jobs.

2.5.9 Fragmentation of the industry

The Ghanaian construction industry is made up of small firms which lack financial capacity. This prevailing characteristic is a hurdle to human capital development. According to Byrne (1999), most small scale firms are not well structured and therefore do not provide training and development to employees. Broadwell (1996) noted that smaller firms have the same training needs such as larger firms. Black and Lynch (1996) also found that larger firms are more likely to provide formal training programs for their employees than smaller firms. However Rowden (1995) explains that relative small firms still integrate human resource development strategies into their business although they are small.

2.6 Global Construction Industry

The building and construction industry has featured prominently in the process of Globalization and has been the primary economic sector that has reaped the material benefit of globalization (Rosewarne et al., 1998). The industry has benefited from the sustained economic growth that has been fuelled by the increased integration of the world's economies. This has been boosted by the international circulation of capital much of which has finance the rapid development of China and India.

Major construction companies have extended their global reach, transforming into transnational conglomerates. The extended reach of the transnational construction

corporations has been reinforced by their extension into financial management. In most advanced and developing economies, the construction corporations have contracted out construction work. Throughout much of the world, the industry is now characterised by an extensive sub-contracting of construction work (ILO 2001).

The institutional and organisational transformation of the building and construction industry has brought considerable change to employment relations. The industry is characterised by less direct employment and a diminution in corporate investment in training and skill formation (ILO 2001). The internationalisation of the construction labour market has been a critical but lesser noted feature of globalisation. The consequences on the building and construction industry have been profound. The corporate construction majors' retreat from the commitment to training and skill formation in the belief that labour needs can be met from an international market, and this will not make for a sustainable future. Nor will this be assured given the failure of governments to secure employment conditions and protections for existing workers or that, on the assumption that restricting the rights of migrant worker or not policing employment regulations, immediate labour shortfalls can be met by tapping into the global labour market.

Globalisation, technological change, market complexity and the increasing number of participants in all industries have put high premium on human capital development because it is a critical component of organisation's competitive capability. Marimuthu et al. (2009) posited that production technology, financing and marketing can all be copied by other competitors but the strategy that is harder to copy is the unique ways an organization optimises its workforce through comprehensive human capital development towards the realisation of organisational goals, long term survival and sustainability.

2.6.1 Construction industry in Ghana

The construction industry in Ghana is a very important in boosting the economy of the country. It is a key industry for generating or creating new wealth and value to meet other economic and social goals in the country (Ahiaga-Dagbui, et al., 2011). The construction industry contributes 21.9 per cent of industrial output and 3.2 per cent of GDP (Baah-Nuakoh 2002). It also contributes about 2.2 per cent of employment of the country's labour force.

The construction industry of Ghana is largely comprised of two sectors, a formal sector and an informal sector. The formal sector is based on the institutional structure and regulatory systems put in place by the British rule prior to independence, to facilitate implementation of physical development agenda of the government at the time. The most popular form of procurement route for many projects in Ghana is the traditional mode of procurement inherited from the British system. Wells (2001) in the paper showed that a number of authors have questioned the relevance of inherited systems and practices of the construction industry of Ghana noting that the level of development of industrialisation and culture of Ghana is different from the UK from which such systems originate.

The informal sector includes small builders and clients seeking to carry out construction of single dwelling houses for their families. Such clients mostly rely on self- employed artisans for their source of labour and free labour such as family and friends. Many construction SMEs operate in both informal and formal sectors. The informal sector comprises project participants similar to the formal sector but relationships between them are typically informal. The construction industry of Ghana, like other developing countries, relies on labour intensive methods. This is most common because the adoption of labour-based methods as a more economic option than equipment-intensive or capital-

intensive methods. Credit arrangements also make it difficult for the accessing of capital thus compelling many contractors, particularly micro contractors, to specialize in labour-based construction methods.

The Ghanaian construction industry is also polarised with very few large foreign construction businesses. Thus the local contractors normally bid for smaller projects within the limits of their capacity whilst foreign firms generally undertake large infrastructure projects. Entry barriers to the construction business are very relaxed resulting in a huge number of contractors chasing fewer jobs. The main constraints facing construction companies include the following; delays in payments of contractors' certificates due to state bureaucracy and sometimes Government's inability to pay for public projects. Borrowing from banks is costly, and could result in many construction businesses becoming insolvent.

2.6.2 The Construction Industry Set-Up

The key stakeholders in the construction industry in Ghana are clients, professional consultants and contractors. Two main groups will be explored in this section; clients and contractors.

2.6.3 Clients

In Ghana four main clients are distinguishable: the Government (being the major client), Real Estate Developers, Investors and Owner occupiers. According World Bank (2003) as provided by Anvuur and Kumaraswamy (2006), an approximate annual value of public procurement for goods, works and consultant services amount to US\$600 million. This represent about 10% of the country's GDP. This amount forms part of the bulk of the expenditure of all government agencies, namely, the Ministries, the Assemblies,

Departments, Institutions and other agencies. Procurement of contracts must strictly follow the rules and regulation of the national procurement law as stipulated in the Procurement Act, 2003 (Act 663). The main procurement arrangement is the traditional competitive bidding.

The government as a client is represented by the Ministry of Road and Highways (for road works) and the Ministry of Water Resources, Works and Housing in giving out projects.

The Real Estate developers are also the other group of clients who undertake large investment in building. Usually, these take loans and undertake speculative buildings for sale. Their performance is usually influenced by the lending situations in the country.

Investors are

usually financial companies who decide to invest excess capital in building construction.

The two upper classes (A1 and A2) are more organised and hence more stable, taking on both bigger and smaller works. However, these firms (especially the A2 firms) do not always employ the very qualified workers. The Ghanaian-based foreign contractors are able to do this and hence performance better. Vulink (2004) notes that because of the poor performance of Ghanaian local contractors most of the nation's major projects are usually awarded to foreign contractors. Assibey-Mensah (2008) attributes this to the "non-business like culture" with which indigenous firms operate in Ghana.

2.6.4 Contractors Classification

Contractors in Ghana are grouped into eight categories (A, B, C, S, D, K, E and G) according the type of works they undertake. These are:

- (i) Roads, Airports, and Related Structures (A);
- (ii) Concrete Bridges, Culverts and other Structures (B);

- (iii) Labour based road works (C);
- (iv) Steel bridges and structures: construction rehabilitation and maintenance (S);
- (v) General building works (D);
- (vi) General civil works (K);
- (vii) Electrical works (E); and
- (viii) Plumbing works (G).

In each category, they are grouped into 4, 3, 2 and 1 financial classes in increasing order (Vulink, 2004). In addition, Dansoh (2005) notes a combined category of AB for road contractors. According to Dansoh (2005) Class 4 contractors can tender for contracts up to \$75,000; class 3 up to \$200,000; class 2 up to \$500,000. Class 1 take contracts of all amounts.

The research focused on projects undertaken by category “A2B2” contractors. The industry is dominated by large number of small- and medium-sized firms, that is, classes 3 and 4, especially in the categories A groups, D, E, and G. This is mainly because such firms are able to register with as little equipment as possible. Mostly, they are sole proprietors, (few cases of partnerships), and are characterised by high attrition rate. This is because they are highly influenced by the boom and slum nature of the industry in Ghana. They are the least organised and because they lack the resources to employ and retain very skilful labour, their performance is usually below expectation and they have often been accused of producing ‘shoddy’ works. Because there are often more jobs within their financial class than those above their limits, and because they form the largest group, their performance impacts greatly on the performance of the industry. Because of this, the classification by the Ministry has been criticised as being too general and obsolete with the registration criteria, list of contractors and monetary thresholds not regularly updated (Eyiah and Cook, 2003).

The two upper classes (D1 and D2) are more organised and hence more stable, taking on both bigger and smaller works. However, these firms (especially the D2 firms) do not always employ the very qualified workers. The Ghanaian-based foreign contractors are able to do this and hence performance better. Vulink (2004) notes that because of the poor performance.

2.6.6 Ghana Road Classification System

The Ministry of Roads and Highways (MRH) in 1999 introduced a new classification system for roads in Ghana in order to conform to international norms. Under the new system roads are classified as table 2.1 below:

Table 2.1 Ghana Roads Classification System. Source: DFR Design Standard Manual

Item. No.	Classification System	Definition
1	National Roads	These are roads linking Ghana with neighbouring countries.
2	Regional Roads	These are roads linking regional capitals
3	Inter-Regional Roads	These are roads linking regional capitals with districts or district capitals with district capitals
4	Metropolitan/Municipal Roads	These are roads in metropolitan and municipal areas
5	Feeder Roads	These are roads which do not fall under any of the above classes. They connect towns, villages and other rural settlements as well as specific land use areas to the other four classes of roads mentioned above.

2.6.7 Functional Classification of Feeder Roads

There are three functional classes of feeder roads. These are:

i Access/Spur feeder road; It is any feeder road which connects only one road, the other end ending in a settlement. The justification for the improvement of such roads cannot be based solely on economic grounds. Although they have an economic function, a significant social component and social benefits are needed to complement the justification of any investment for their improvement. These roads are relatively short in length and carry relatively low volumes of motorized traffic.

ii A connector feeder road; It is a feeder road whose two ends connect other roads. In addition to providing access to communities along the road itself it also forms part of routes followed by motorists making long journeys that do not terminate in the road corridor. Whenever, any of these road links generate traffic of over 200 v.p.d. then, it becomes economically viable to upgrade it to a bituminous surface.

iii. An Inter-district feeder road; It is a connector that links two or more districts.

2.7 Construction Firm Performance

In this section the relationship between construction project and business organisation as a means by which best practice performance could be studied is explained further. It goes further to highlight some key performance measurement frameworks in the business world which are of relevance to this research.

2.7.1 Construction Performance Assessment as a Business Issue

Kashiwati (2002) posited that construction is a business issue and not an engineering technical issue. He goes on to state that any lay person can identify whether the contractor finished on time, on-budget, and whether the owner's expectations were met.

Thus, he opined that solving a business issue with technical specifications will not lead to performance. Further, he suggested that performance specification should include owner's requirement, and the *method* of identifying the best performance. Dinsmore (2005) explains that business prosperity depends on the efficient management of projects. According to him, this is achieved by adding value to the business and that "value is added by systematically implementing new projects –projects of all types, across the organization". He referred to this as managing organisations by project (MOBP) and later *enterprise project management* (EPM) in which all business endeavours need to be well focused and result-oriented. This will enable organisations to apply project management to target strategic corporate needs, rather than merely accomplishing specific, isolated projects (Dinsmore 2005). Dinsmore (2005) outlines reasons why organisations are becoming "projectised", the relevant ones to this study are: it allows organisations to perceive themselves as dynamic organisations composed of countless projects simultaneously being managed to completion; an organisation's success depends on new projects, as opposed to excessive concentration on business as usual; the time-to-market squeeze companies experience demands that projects be completed on time, within budget, and meet the required quality standards and customer requirements; quantum leaps in bottom-line effectiveness come from new initiatives, and that calls for project management; and with project management in place, companies tend to improve customer satisfaction, market penetration, and financial results. Projects, thus, are seen by businesses as product lines or portfolios.

2.7.2 Some Relevant Business Performance Frameworks

In addressing the issue of construction project assessment, this study also draws from business performance measurements, especially, those which provide measures that

resonate with the construction project situation. Four of such relevant frameworks are discussed. The first one is the Results and Determinant framework (Fritzgerald et al., 1991)” which deals with performance measurement of the service sector and it is based on the premises that there are two types of performance measures in any organization: those which relate to the results (*competitiveness and financial performance*) and those which relate to the determinants of the results (*quality, flexibility, resource utilization and innovation*). The strength of this distinction by the framework lies in its emphasis that results obtained are a function of past business performance with regard to specific determinants. Results, they explain, are ‘lagging’ indicators whereas determinants are ‘leading’ indicators. The second one is the “Strategic Measurement Analysis and Reporting Technique (SMART)” by Lynch and Cross (1991). Also called the “Performance Pyramid”, a key feature of this framework is that it makes explicit the difference between measures that are of interest to external parties –*customer satisfaction, quality and delivery* and those that are of primary interest within the organisation –*productivity, cycle time and waste* (Neely et al, 2000). This model satisfies an important requirement of performance measurement system (PMS) in that it “links the performance measures at the different hierarchical levels in a company, so that each function or department strives towards the same goals” (Tangen, 2004).

The third is “the Balanced Scorecard (BSC) by Kaplan and Norton (1992)”. The BSC is probably the most popular PMS among the emerging models for performance measurement in business and other organisations. This model allows top management to take a quick but comprehensive view of the business from four important perspectives which provide answers to the following (Kaplan and Norton, 1992);

- How do we look to our shareholders (*Financial Perspective*)?
- What must we excel at (*internal business perspective*)?

□ How do our customers see us (*the customer perspective*)?

□ How can we continue to improve and create value (*innovation and learning*)?

By combining financial measures and non-financial measures in a single report it emphasizes that both must be part of the information system for employees at all levels of the organisation. The BSC aims to provide managers with richer and more relevant information about activities they are managing than is provided by financial measures alone. The BSC provides managers with the instrumentation they need to navigate to future success (Kaplan and Norton, 1996). It provides them with a comprehensive framework that translates a company's vision and strategy into a coherent set of performance measures (Kaplan and Norton, 1996). The BSC, exhibits the following four characteristics which provide a footing for the approach to assessing performance of projects contemplated in this research (Table 2.2).

Table 2.2 Mapping the Characteristics of the BSC to the Project Performance Assessment Characteristics.

The BSC (Kaplan and Norton, 1996)	Useful application in the project situation
It translates an organisation's mission and strategy into a comprehensive set of performance measures that provides the framework for strategic measurement and management system.	To translate the expectations of the stakeholders (clients and practitioners) of a project into a comprehensive set of performance measures that provides the framework for strategic measurement and management system.
It retains an emphasis on financial measures as well as including the performance drivers of these financial objectives	To use all the relevant contingency measures (including financial ones) that will reflect the strategies, visions and expectations of the stakeholders, particularly clients.
It measures organizational performance across four balanced perspectives: financial, customers, internal business processes, and learning and growth.	To measure the performance of the project across all relevant measures including financial, internal business process, environmental and social impacts in the perspectives of key stakeholders, in this case clients and practitioners; and to use the assessment process to provide learning and growth.
It enables companies to track financial results while simultaneously monitoring the intangible assets they need for future growth (Kaplan and Norton, 1996).	To enable the project management team to monitor and control all aspects of the project through the relevant contingency measures

The last framework to consider is the Performance Prism (PP) by Neely et al. (2002).

The PP is underpinned by three fundamental premises (Neely et al, 2002):

□ It is no longer acceptable (or feasible) for organisations to focus solely on the needs of one or two of their stakeholders –typically shareholders and customers –if they wish to survive and prosper in the long term;

□ An organisation's strategies processes and capabilities have to be aligned and integrated with one another if the organisation is to be best positioned to deliver real value to all of its stakeholders;

□ Organisations and their stakeholders have to recognise that their relationships are reciprocal. Stakeholders have to contribute to organisations, as well as expect something from them.

It is a three dimensional model made into a prism shape, with the top and bottom facets as *stakeholder satisfaction* and *stakeholder contribution* respectively. The three sides are *Strategies, Processes and Capabilities*. Thus, the PP consists of five interrelated perspectives on performance that pose specific vital questions:

□ Stakeholder Satisfaction –who are our key stakeholders and what do they want and need?

□ Stakeholder Contribution –what do we want and need from our stakeholders on a reciprocal basis?

□ Strategies –what strategies need to put in place to satisfy the wants and needs of our stakeholders while satisfying our own requirements too?

□ Processes –what processes do we need to put in place to enable us to execute our strategies?

□ Capabilities –what capabilities do we need to put in place to allow us to operate our processes?

The framework, according to Neely et al., (2002), has been designed to be highly flexible so that it can provide both a broad and a narrow focus as required. If only a part of the aspects of the performance management is required, such as a single stakeholder focus or a particular business process agenda, then the PP can be applied to designing a measurement system and appropriate measures (and their attendance metrics) that address that context. It is also, equally, capable of supporting broad corporate or business unit performance management improvement initiatives too (Neely et al, 2002). Unlike the Balanced scorecard, the Performance Prism starts with stakeholder satisfaction not strategy.

Organisations stakeholders are likely to be a combination of a number of the following (Neely et al, 2002):

- Investors (principally shareholders, but other capital providers too);
- Customers and intermediaries;
- Employees and labour unions;
- Suppliers and alliance partners;
- Regulators, pressure groups and communities.

The PP takes the view that these and their satisfaction criteria should form the basis of performance measures designs. “To derive measures from strategy”, posit Neely et al (2002), “is to misunderstand fundamentally the purpose of measurement and the role of strategy”. Significantly, they opined that performance measures are designed to help people track whether they are moving in the direction of their intended destination and to help them establish whether they will indeed reach their set destination. Strategy, however, is not about destination; but about the route you choose to take. Essentially, it is about how to reach the desired destination (Neely et al, 2002). They, thus, conclude that the starting point for deciding what measure to be used should not be “what is the

organisation's strategy?" But instead: "who are the organisation's stakeholders and what do they need?" Hence in the PP, the first perspective on performance is that of the stakeholder satisfaction. The PP framework has the most appeal to project management in general and this research in particular. Applying the PP concept to the project situation, there will be *quid pro quo* relationship through which the management of a project will be effectively enhanced in the following ways:

- i. Clients' contribution to the project performance will be as equally important as their satisfaction. Therefore, clients will be expected to live up to their roles.
- ii. Practitioners' maximum contribution and commitment to the project will be seen as the necessary means for ensuring good performance and thus, merit their fees and satisfaction.
- iii. All other stakeholders on the project e.g. employees, contractors, end users, beneficiary community etc., will recognise this relationship. Significantly, the BSC and the PP in particular touches on three key aspects which relate very much with the basis of the theoretical framework of this research.

These are:

- i. Strategies: this relates to motivation, expectation and culture;
- ii. Capabilities (knowledge): this relates to people, learning, technology, practice, and infrastructure;
- iii. Processes: this relates to actions.

The trend shows that the concepts of measurement, whether in the project situation specific (as a temporary organisation) or in business enterprises (as a permanent organisation) are adopting multiple measures to address several dimensions. On the grounds that performance measurement (whether for projects or organisation) is a business issue, and that the project is a temporary organisation, it is practicable to adopt

and adapt some of the concepts and even measures from the other organisations to the construction project situation. More importantly, the concepts and philosophies behind these models hold a lot of promise to the construction projects (especially, in the case of the balanced scorecard and the performance prism). Neely et al (2002) believe that there is no one “holy grail” or one “best way” to view business performance. And that all the various frameworks “can exist because they add value” (Neely et al., 2002).

Regarding the adoption and adaptation of best practices to the construction industry, Mohamed (1996) notes that the industry lacks consistent methods of measuring performance and data for benchmarking and therefore suggests that before some of these best practices could be applicable to construction, the benchmarking form being applied in the manufacturing sector should be re-dimensioned as:

- **Internal benchmarking:** this has to do with the firm level performance assessment
- **Project benchmarking:** This has to do with the project level performance assessment
- **External benchmarking:** Industry level performance assessment

This research is focused on the project benchmarking level. It is the position of this research that such adaptations should also take place within the broader consideration of the construction project as a temporary organisation. The main distinction that needs to be clarified should, of course, be between the production management aspect and the project management aspect of the project being implemented (Koskela and Howell, 2000).

2.8 The Relationship between Human Capital and Firm Performance

The human capital focuses on two main components which are individuals and organizations. This concept have further been described by Garavan et al., (2001) that human capitals have four key attributes as follows: (1) flexibility and adaptability (2) enhancement of individual competencies (3) the development of organisational competencies and (4) individual employability. It shows that these attributes in turn generate and add values to individual and organizational outcomes. There are various findings that incorporate human capital with higher performance and sustainable competitive advantage (Nordhaug, 1998); higher organisational commitment (Iles et al., 1990); and enhanced organisational retention (Robertson et al., 1991). Hence, all this debates fundamentally focuses on individual and organizational performance. From the individual level, Collis and Montgomery (1995) point out that the importance of human capital depends on the degree to which it contributes to the creation of a competitive advantage. From an economic point of view, transaction-costs indicate that firm gains a competitive advantage when they own firm-specific resources that cannot be copied by rivals. Thus, as the uniqueness of human capital increases, firm have incentives to invest resources into its management and the aim to reduce risks and capitalize on productive potentials. Hence, individuals need to enhance their competency skills in order to be competitive in their organizations.

The human capital theory has undergone a rapid development. Within its development, greater attention has been paid to training related aspects. This is much related to the individual perspective. Human capital investment is any activity which improves the quality (productivity) of the worker. Therefore, training is an important component of human capital investment. This refers to the knowledge and training required and undergone by a person that increases his or her capabilities in performing activities of

economic values. Some recent literature shows the importance of training. In any case, it is fitting to point out that the workforce's lack of training is related to low competitiveness (Green, 1993). In turn, a greater human capital stock is associated with greater productivity and higher salaries (Mincer, 1997). Likewise, training is linked to the longevity of companies (Bates, 1990) and greater tendency to business and economic growth (Goetz and Hu, 1996). In addition, Doucouliagos (1997) has noted human capital as a source not only to motivate workers and boost up their commitment but also to create expenditure in Research and Development (R&D) and eventually pave a way for the generation of new knowledge for the economy and society in general. Also, for small businesses it is a valuable asset, which is positively associated with business performance. Finally, investment in training is desirable from both a personal and social perspective. From the organizational level, human capital plays an important role in the strategic planning on how to create competitive advantages. Following the work of Snell et al., (1999) it stated that a firm's human capital has two dimensions which are value and uniqueness. Firm indicates that resources are valuable when they allow improving effectiveness, capitalizing on opportunities and neutralizing threats. In the context of effective management, value focuses on increasing profits in comparison with the associated costs. In this sense, firm's human capital can add value if it contributes to lower costs, provide increased performances. Another study by Seleim et al., (2007) analysed on the relationship between human capital and organizational performance of software companies. They found that the human capital indicators had a positive association on organizational performances. These indicators such as training attended and team-work practices, tended to result in superstar performers where more productivity could be translated to organisational performances. This was also supported by Dooley (2000) who found a significant positive correlation between the quality of

developers and volume of market shares. Based on the above arguments we can conclude that human capital indicators enhanced the firm performance directly or indirectly. A study by Bontis and Fitzenz (2002) found that the consequences of human capital management and they established the relationship between human capital management and economic and business outcomes. In this study, a total of 25 firms in the financial services companies were selected. The study measured human capital effectiveness with four metrics; revenue factor, expense factor, income factor and Human Capital Return on Investment (HCROI). The fundamental aspects of any organization are to generate more revenue and income per employee. Human capital has a direct impact on the intellectual capital assets that will yield higher financial results per employee. The development of human capital is positively influenced by the educational level of employees and their overall satisfaction. Therefore, development of human capital has a direct impact on Return on Investment (ROI) of firms.

A causal model using a set of cross-sectional data developed by Selvarajan et al. (2007) indicates that human capital enhancement paves a way for greater innovativeness and this in turn offers positive implications on firm performance. In the meantime, firm performance and human capital could also be viewed in the context of high performance work systems (Hsu et al., 2007). It is argued that the formation and emphasis on the human capital enhancement will result in high performance or rather high performance work systems.

Admittedly, human capital development and enhancement in organizations tend to create a significant contribution on organizational competencies and this in turn becomes a great boost for further enhancing innovativeness and the current literature to a large extent supports the fact that firm performance is positively impacted by the presence of human capital practices (Noe et al., 2003; Youndt et al., 2004). Some even endorsed that

human capital development is a prerequisite to good financial performance (Delaney & Huselid, 1996) and in addition, the importance of organizational human capital with regard to firm performance was further supported by Hsu et al. (2007). In addition, evidence shows that the relevance of human capital to firm performance has also become prevalent among the technology-based new ventures, and it seems that the use of human capital tool (emphasizing quality of employees) per say in small technology based new ventures tends to have a great impact on the firms' success (Shrader and Siegel, 2007).

In the meantime, human capital enhancement can also be viewed in the context of Top Management Team (TMT). Heterogeneity or sometimes is called diversity in TMT will tend to lead to greater performance because the argument is heterogeneity promotes various characteristics to be absorbed into the work force team; this includes people of different age groups, functional backgrounds, education backgrounds, tenure and gender. These characteristics have a positive impact on firm performance as argued under the upper echelon theory (Hambrick and Mason, 1984). Studies reveal that heterogeneity cultivates greater knowledge, creativity and innovation among the team members (Watson et al., 1993; Maimunah and Lawrence, 2008). Heterogeneity is positively linked to better problem solving and offering creative solutions (Michel and Hambrick, 1992).

Hence, diversity is positively related to performance. Even in the context of an organization, the implementation of certain management approaches or philosophies also deals with the infusion of human capital (e.g quality circles, team of employee's experts) especially when faced with problems (Kanji, 1997). Again, in a very broad discussion, especially in the context of total quality management (TQM), firms can be assessed using financial and non-financial performance. The financial performance includes employee productivity, defect rates and market share and non-financial performance that include work flow improvement, innovation, customer satisfaction and skills

development (Kaplan & Norton, 1994). Besides this, diversity is able to attract and retain the best talent available; reduced costs due to lower turnover and fewer lawsuits, enhanced market understanding and marketing ability, better problem solving, greater organizational flexibility and better overall performance and improvement in decision making at strategic level (Bantel, 1993). Heterogeneity is positively linked to better problem solving and offering creating solutions (Michel & Hambrick, 1992). A recent study in the related area also provides some insightful information about the heterogeneity effect on firm performance (Maran, 2008). Undoubtedly, heterogeneity (in the form of human capital) can be a significantly important input to human capital development and enhancement as it makes organizations to be more creative and innovative for long term survival in their international and global markets (Grossman, 2000). In light of this, the competency of Top Team Management (TMT) is supported by the input-based international human capital, transformational human capital and output-based international human capital (Huang et al., 2002). However, some even argue that the relationship between innovative human resource practices (though human capital practices are not directly involved) and organizational performance could be described as ‘non-linear’ (Becker & Barry, 1996; Chadwick, 2007).

2.8.1 Impact on Firm Productivity

National Institute of Economic and Social Research provide some interesting evidence on the links between the skill composition of the work-force of a firm and labour productivity is provided. In their study, they take a number of UK manufacturing firms and match them with continental firms producing similar products. This allows them to carry out direct productivity comparisons of these matched samples of manufacturing plants (Mason and van Ark, 1994). In the UK, the lower level of manpower skills was

found to affect negatively labour productivity, the types of machinery chosen, the ways in which machinery was modified for the firm's particular needs, the smooth running of machinery and the introduction of new technology. The relationship between workers' productivity and subsequent firm *profitability* is, however, a complex one (Mason and van Ark, 1994).

Present literature aiming to enumerate directly the impact of training to worker or firm productivity, several studies show that training does indeed have a positive effect on productivity. Some studies have found a positive effect of human resource practices (including training) on firm productivity (Black and Lynch, 1997). Some very interesting conclusions can be drawn from the evidence concerning the impact on productivity of training undertaken with a *previous* employer.

2.8.2 Impact on Firm Profitability

Existing literature also shows positive correlation between human capital development and firm's profitability. The few studies available that have addressed this issue tend to confirm that not all the productivity gains resulting from training are compensated through a corresponding increase in individual remuneration, so that investment in training remains profitable for firms. In particular, two studies using very different data and approaches suggest that the productivity increase is over twice the size of the wage increase caused by training (Tamkin et al., 2004)

Further interesting results relate to the existence of profitability returns to the firm from training sponsored by another employer. This suggests that on-the-job employer-provided training sometimes generates considerable third-party externalities (benefits that are not appropriated by either the trainee or the trainer) when trainees do not stay with the employer who trained them.

2.8.3 Impact on Firm Long-Term Competitiveness

Some empirical studies directly confirm findings, suggesting strong links between the employment of graduates, including professional scientists and engineers, and the adoption and use of high-level technologies in the firm, and between the extent of investment in worker training and the speed and successful adaptation of new technology and also impact on future competitiveness (Pfau and Kay, 2002; Low and Kalafut, 2002). More-highly-educated and more highly-skilled workers have been found not only to be able to adapt more rapidly and efficiently to new tasks and technologies, but also to be a direct source of innovation and to influence the long term competitiveness of the company (Low and Kalafut, 2002). In fact, education and even previous informal training have been found to increase substantially a worker's ability to be innovative on the job.

2.9 Human Capital Development Research in the Ghanaian Context

From the foregoing it can be seen that existing literature shows a strong positive relationship between human capital development and firm's performance. Extant literature also shows a dearth of studies on human capital development in the Ghanaian context. Fugar et al., (2013) explored the human capital theory and its implications for the Ghanaian construction industry. The study based on a literature review explored empirical evidence of the implications of human capital development on the construction industry. The review was based on studies done outside the Ghanaian industry and indicates lack of empirical evidence on the relationship between human capital development and company's performance in the Ghanaian context.

2.10 Summary of Chapter

The research tried to discover the existing literature on human capital and its impact on firm performance. The conceptualisation of human capitals is closely connected to some basics of economics and firm performance. The literature reviews demonstrates that there are solid proofs to show that the infusion of human capital development in organisations encourages innovativeness and better firm performance. Studies also point to the fact that financial performance is surely impacted through the development of human capitals.

Therefore to sustain competitiveness in the global organisation, human capital development becomes a medium through which productivity can be increase.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

A research design is logical sequence that connects the empirical data to a study's initial research question and ultimately to its conclusion. The next important step in any research process after study of literature and identifying the research question is deciding on the most suitable methodology [Cooper and Schindler, 2003]. This chapter describes the researcher's general study approach, discussion and motivation of data collection methods employed. The methodology also informs the strategy and procedure to be employed in carrying out the research agenda and how the data collected is interpreted.

3.2 Research Approach

The research approach discusses amongst others the philosophical position of the research, the strategy adopted, the selected research design and why that was chosen as well as the research process. As with all decisions regarding the choice of research methods, the objectives of the study and the nature of the data required to meet them will determine which methods and strategies to combine.

Quantitative research is a research strategy that emphasizes measurement and quantification in the collection and analysis of data (Bryman, 2004) while qualitative research is any type of research that produces findings not arrived at by statistical procedures or other means of quantification (Strauss and Corbin, 1998). The decision to adopt one, as these authors have argued will be affected by the epistemological orientation of the researcher and their views on the integrity of different methods for investigating the central phenomena under study.

Brannen (1992) noted that, with the multiple methods; the researcher has to confront the tensions between different theoretical perspectives while at the same time considering the relationship between the data sets produced. This research therefore adopted the mixed-method research strategy. It employed the use of quantitative and a multiple of qualitative methods in the study to assess the impact of human capital development among road contractors' in the country and its impact on performance to firms success. Data collection comprised a mixture of qualitative and quantitative data, though mainly qualitative, due to the nature of the units of analysis as well as the expected outcomes of the various instruments. These were also influenced by the expected outcome and information/ data needed to allow for the right analysis and conclusions to be drawn. However, to allow for the depth of information needed from construction companies, a cross-sectional survey comprising questionnaires and interviews was used.

3.3 Research Design

Yin (2003) described the research design as that structure which guides collecting and subsequently analysing data or as the techniques for doing this. It enables the researcher to connect empirical data to its conclusions to the initial research question of the study in a logical sequence (Bryman, 2004; Yin, 2003).

A Cross Sectional design will be employed for this research. This was because the research comprised a wide variety of designs including: surveys; structured observations; content analysis; official statistics and documentation. The 'where', 'who' and 'what' questions asked by this research were answered by employing survey design methods: interviews and questionnaires. Additional questions including the 'hows' and 'whys' were answered by employing other designs including narrative analysis, content analysis, official statistics, and documents. Also, historical data (archival analysis) obtained from

literature informed the research and aided in the design of the procedural framework. This provided a good platform to extensively exhaust the questions and provide appropriate answers to them.

3.4 Research Process

Exploratory and in-depth review of existing literature on the subject matter coupled with a preliminary survey comprising interviews and questionnaire administration to employers and employees within selected construction companies in the country, as well as prominent HRM practitioners, served as a background to the research. This build-up led to the establishment of the problem, justifying the need for this research which further led to the establishment of research questions, an aim and specific objectives in Chapter 1.

The researcher then proceeded to the field: to collect primary data. This stage adopted what Bryman (2004) described as a cross-sectional design. The representative of the MRH was interviewed to provide information on the structure of the industry, provisions made and existing regulation and legislation as well as official statistics of construction companies operating in Ghana. Representatives (Executive Committee Members) of organizations including: Association of Road Contractors, Ghana(ASROC) and Progressive Road Contractors Association (PROCA)]; as well as prominent Human Resource Managers and Industrial Relations Practitioners and Experts in Ghana were interviewed to provide the research with an overview of Human capital development practices in Ghana. The study surveyed registered “A2B2” construction companies to investigate their Human Capital Development (HCD) practices and challenges. The data collected from the primary sources coupled with that obtained from secondary literature

sources help to measure the impact of human capital on performance and the challenges to human capital development among road contractors in Ghana respectively.

3.5 Data Collection

Primary data for the research was collected from two main sources: employer and employees within the construction industry. Employers and employees of construction companies who participated in the study provided data which informed the research on the state of HCD in their respective companies. The in-depth review of existing literature laid the platform for the commencement of primary data collection for the cross-sectional study.

The choice of data collection method depends on the available resources and how best the method can generate the required information from the selected sample (Cooper and Schindler, 2001; Sekaran, 2003; Babbie, 1999). In this study, data was collected using mainly questionnaire survey and semi-structured interviews with the HR Managers. Prior to contacting the companies, support letters from the Kwame Nkrumah University of Science and Technology (KNUST) of Ghana were sent to them.

The MRH was contacted for a list of registered road construction firms in the country. The registered A2 and B2 construction companies were approached in two ways. Those with valid email addresses were directly invited to participate in the survey. The emails were made as personalized as possible since this may lead to an increase in the response rate (Cook et al., 2000; Schaefer and Dillman, 1998). For companies that do not readily provide valid email addresses of their HR Managers or contact persons, they were firstly contacted by telephone.

3.6 Sampling Procedure and Techniques

A working population is the operational definition of the general population from which the researcher can reasonably identify as complete a list as possible of members of the general population (Rea and Parker, 1997). Due to time and financial constraints on the part of researchers, a census is usually disregarded as unfeasible, that is, not all members of the population are being surveyed. A subset of the population or the 'sample' is, thus, used to gain information about the entire population (Henry, 1990). A relatively small sample if appropriately selected can be informative about the total population. The Department of Feeder Roads under the Ministry of Roads and Highways in Ashanti Region provide a total number of 21 "A2B2" contractors working with Feeder Roads in the Region. Due to the small size of the population, there was no sampling conducted. Thus the total population here being the A2B2 contractor were the target of the questionnaire distribution

3.6.1 Questionnaires

Sekaran (2003) averred that a questionnaire is a preformulated written set of questions to which respondents record their answers, usually within rather closely defined alternatives. Whiles Oppenheim (1992) described questionnaire formulation as an integral part of the research design stage. Frazer and Lawley (2000) described four main methods of questionnaire administration: mail questionnaire; personally administered questionnaire; telephone questionnaire; and internet questionnaire. For this study both personally administered questionnaire and internet questionnaire were adopted. The questions were kept direct and structured, with minimal open-ended questions to encourage participation. An advantage of closed-ended questions is that the answers are uniform, which will permit the direct transferal data from the questionnaire to the computer without intermediate stages.

The questionnaire used in this research was in three sections: Section 'A'; Section 'B'; and Section 'C'. Section 'A' sought to investigate characteristics of the surveyed companies and the respondent answering the questions. Some of the questions included the position held in the organization, their level of education and how long the organization has been. Section 'B' investigated characteristics of their Human Capital Development (HCD) practices, function, organizational structure and its impact on a firms performance Section 'C' investigating challenges of HCD in the construction industry. Section C also included an open ended question requesting for any recommendation for the development of human capital in the construction industry.

3.6.2 Interviews

Bryman (2004) described two main methods of conducting interviews: structured interviews; and qualitative research interviews which he described to comprise less structured interviews mainly unstructured or semi-structured interviews. This is not to say that structured interviews are not used in qualitative research. A structured interview is an interview design used mainly in survey research where the respondent is expected to answer a standardized set of questions. Qualitative interviewing methods however are much less structured and the focus is on the interviewee's point of view than the researchers concern. According to this author, this method provides the needed flexibility for other issues which could be of much interest to the research to be discussed and considered in future interviews or introduce a different point of view. In semi-structured interviews, the researcher has a list of fairly specific topics to be followed which serves as a guide to the interview. In totally unstructured interviews, the researcher uses at most an aide-mémoire (Burgess, 1984) as a brief set of prompts.

Semi-structured interviews were conducted with the registered A2 and B2 construction companies sampled for the purposes of this research. The interview sought to amongst others investigate the HCD practices of the companies in greater depth than the questionnaire allowed. It was conducted after the questionnaire had been answered by the respondent. Respondents were briefed on the importance of the interview and its relevance to the investigation. This approach was adopted to allow the interviewer to explore the views of the interviewee, allow them to explain their views on the subject matter; make recommendations and suggestions and make room for the discussion of other pertinent issues not covered in the interview guide.

3.7 Data Processing and Analysis

Bryman (2004) noted that, there is the need to first identify the type of variable(s) to aid in determining the analytical methods to be employed. These classifications help in appreciating which methods of analysis can be applied when examining variables and the relationships between them, hence which analytical methods and tools to adopt. Data presentation is one of the most essential stages of any research process as research basically boils down to effectively communicating the findings to an audience (Agbodjah, 2008).

Both qualitative and quantitative approach to data analysis was employed for the study. The data collected was edited, sorted, and coded. Statistical Package for Social Scientists, version 17 (SPSS Version 17), Microsoft excel, descriptive statistics, relative index and cross tabulation were used to analyse the data. Frequency table, bar chart, were also used for data presentation. The results from these analyses provided the basis for finding out what patterns and common trends run through the responses with respect to the human capital development; its impact on performance and challenges among road

contractors. The basis for deviations from the common trends running through the responses was also established from the analysis.

3.8 Conclusion

This chapter presented the methodology adopted for this study. As aforementioned in chapter one of this research, the methodology is preceded by a systematic literature through text books, institutions and statutory publication, periodicals and trade/academic journals, seminar and conference papers to ascertain a good understanding for the research. A questionnaire survey was used to collect primary data from the identified contractors.

CHAPTER FOUR

PRESENTATION OF DATA, RESULTS AND ANALYSIS

4.1 Introduction

This chapter sets out the analysis of the data collated to achieve the aim of the research. The overarching aim was to assess the impact of human capital development on the performance of road contractors in Ghana. Firstly the demographic data is analysed with descriptive statistics while the rest of the data is analysed using the relative index.

The questionnaire is divided into three main sections. The first section deals with the demographic data of the individuals and sought to answer questions like the position held by the respondents, the length of time of service in the institution, age group distribution and academic qualification. Out of the 21 questionnaires distributed, 20 representing 95% were completed and retrieved. The basis of the research findings were on these 20 questionnaires retrieved. It should be noted that there were missing values in some completed questionnaires. The relatively high response rate was mainly due to the method used in distributing the questionnaires. The survey respondents were implored to fill the questionnaires immediately they were given.

4.2 Analysis of Demographic Data

This section sets out the analysis of the demographic data. A total of 21 questionnaires were sent out and 20 were retrieved. The high response rate is attributed to the follow ups that were regularly done and also on the insistence of the questionnaires to be answered when given rather than leaving it with the employees and managers to be collected later. The rapport established by the researcher with the survey individuals also enhanced the quick response by the individuals.

4.2.1 Position held by Respondent

The first question sought to find out the various positions held by the respondents to the questionnaire. The results show that 43% of those answered the questionnaires were Project or Contract Managers and this represents the highest number of individuals answering the question. The results are displayed in table 4.1. The result shows that the least represented individuals in answering the question were human resource managers. The questionnaires were targeted at individuals in middle management and above. This was done due to the fact that individuals in such position are very conversant with human developmental process taking place in the company. With over 40% of questionnaires being answered by project/contract managers the research results are influenced by individuals who appreciate the role of human capital development.

Table 4.1 Respondents Background. Source: Survey Data

Variable	Option	Frequency	Percentage (%)
Position held by respondent	Project/ Contract Manager	9	42.9
	Civil Engineer	5	23.8
	Materials Engineer	3	14.3
	Managing Director	3	14.3
	H.R	1	4.8
Duration spent by respondent in current institution	0 - 5yrs	5	23.8
	6 - 10 yrs	11	52.4
	11 - 15yrs	1	4.8
	16 - 20yrs	2	9.5
	21yrs and above	2	9.5
Age group of respondent	18 - 30yrs	3	14.3
	31 - 40yrs	9	42.9
	41 - 50yrs	4	19.0
	51 - 60yrs	4	19.0
Highest academic qualification	Postgraduate	2	9.5
	First degree	12	57.1
	HND/ Diploma	5	23.8
	Technician (CTC I, CTC II, CTC III)	1	4.8
Professional qualification of respondent	Msc Building Technology	1	4.8
	Civil engineering	2	9.5
	chartered accountant	1	4.8
	Ordinary Technician	1	4.8
	Diploma		
Years of existence of respondents organisation	0 - 5yrs	1	4.8
	6 - 10yrs	2	9.5
	11 - 15yrs	3	14.3
	15 - 20yrs	9	42.9
	20 yrs and above	6	28.6

4.2.2 Duration spent by respondents in current institution

The next question sought to investigate the duration of respondents in their various institutions. This question sought to find out how experienced the individuals are in their various place of work. An individual who has spent a lengthy time at a particular place is better positioned to answer the research questions than one who is not. The results are displayed in table 4.1. The results show that over 60% of the respondents have spent more than 5 years at their various places. This increases the quality of answers derived from the respondents as they have spent more time at their various place.

4.2.3 Age group of respondent

The questionnaire further explored the age group of the respondents. The study show that over 50% of the respondents are above the age of 30 years. This is not surprising as most middle and top management are those who are experienced in the fields and by this reason are advance in ages. Only four of the respondents were between the ages of 41-50 years and 51-60 years.

4.2.4 Highest academic qualification

The educational background of the individuals of the respondents was also investigated. The results showed that out of the 20 people, who responded 12 of the individuals had attained an undergraduate degree representing about 60%, only two had a postgraduate education, five on the respondents had a higher national diploma and the rest (only one) had a technician level qualification. It should be noted that all the respondents had a tertiary qualification level. Thus the results represent the perception of individuals with a higher degree of intellectual capacity and inform the quality of the findings.

4.2.5 Professional qualification of respondent

The respondents were asked to indicate their professional background. The highest numbers of professionals represented in the survey were of Civil engineering background. They represented 40% of the respondents. The rest of the professionals had a fair representation with each having 20%. The professionals were made of the building technologist, chartered accountant and technicians as shown in figure 4.1.

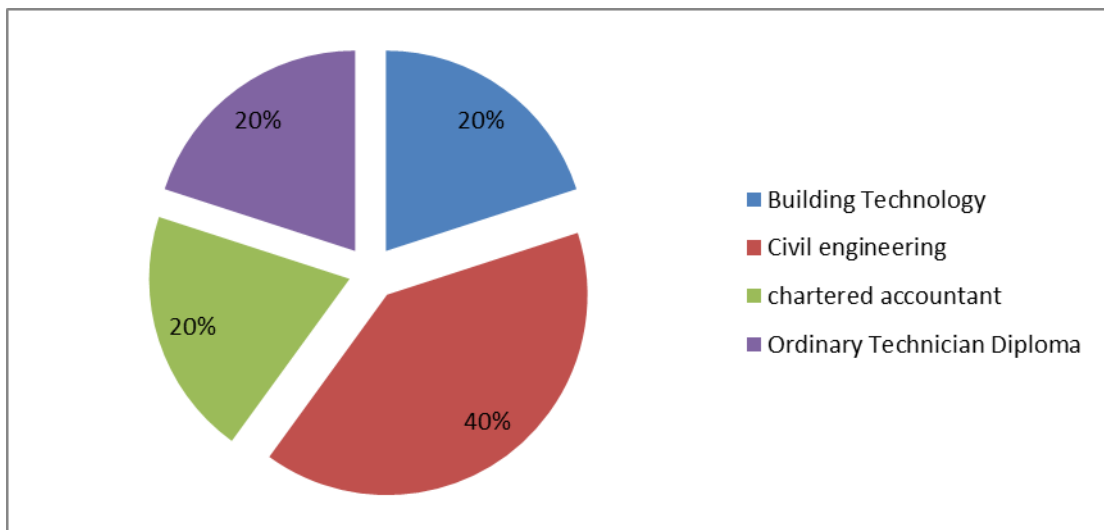


Figure 4.1 Professional qualification of respondent

Source: Survey Data

4.2.6 Years of existence of respondent's organisation

For an organisation that has not been in existence for a lengthy time its growth may influence how the organisation is run causing its management of key resources to be affected. The study investigated the length of existence of the organisations to which the respondents were working. This result is shown in table 4.1. The results show that over 50% of the organization had been in existence for more than 15 years. The findings from the study thus shows the actual conditions taking place in category of contractors investigated. With very low infant organizations being represented in the research one can safely say that the findings reflect the current practice of most A2B2 contractors.

Generally, the results in the tables above indicate that the respondents have reasonable experience and expertise in the management of human capital in their respective organisations. Furthermore, the findings suggest that most respondents are regularly active and the organisations investigated are well established. It seems therefore plausible to conclude that those who responded to the survey are sufficiently experienced in human capital developmental issues in the Ghanaian road construction industry and have provided data which is credible.

4.3 Level of Human Capital Development in the Ghanaian Road Construction Industry

This section tried to solicit views from the respondents if there was any program in place for human capital development in their respective construction firms.

4.3.1 Program for human capital development in company

The availability or otherwise of a program for human capital development in a company informs the degree to which human capital is enhanced. The second part of the questionnaire investigated this. The research study indicated that about 76% of the construction industry have available program in place for human capital development. The results are displayed in table 4.2. The figure indicates that out of the 20 people who responded 2 construction companies had a program in preparation and 2 did not have a program planned.

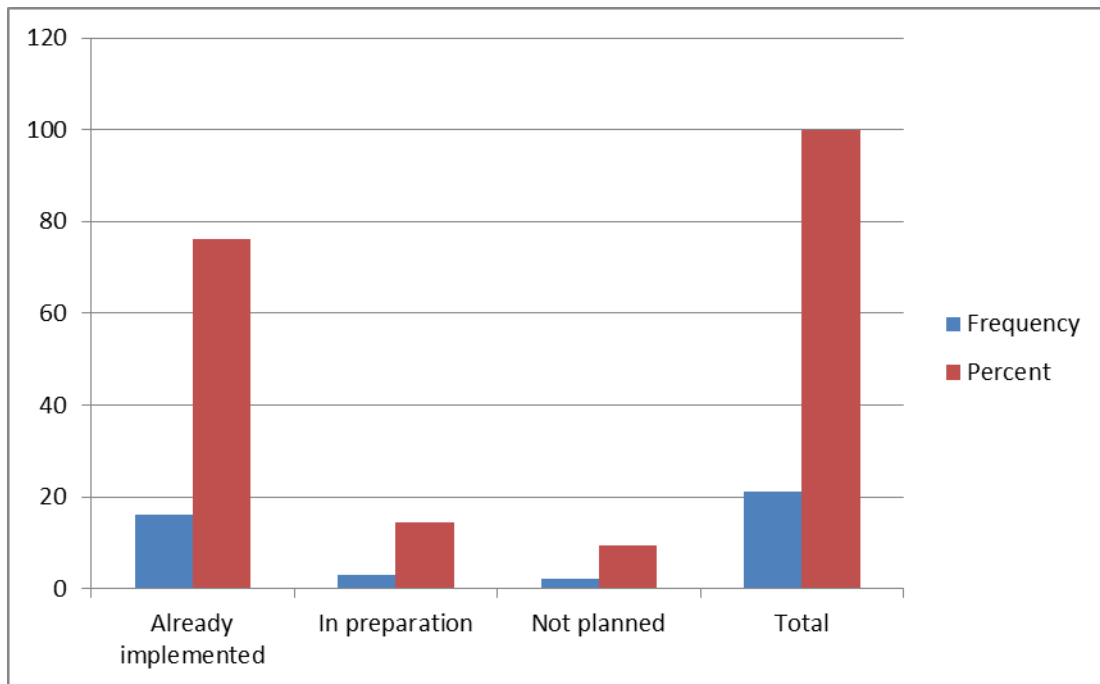


Figure 4.2 Availability of a Program for Human Capital Development in Company.

Source: Survey Data

The type of program and the degree to which it was formalized was investigated in the next question. The study showed that in most of the programs about 70% in the various organizations were of a short-range style and were periodic in nature. 9.5% had no formal program and 14.3% had a formal program in place. The results are further displayed in figure 4.3

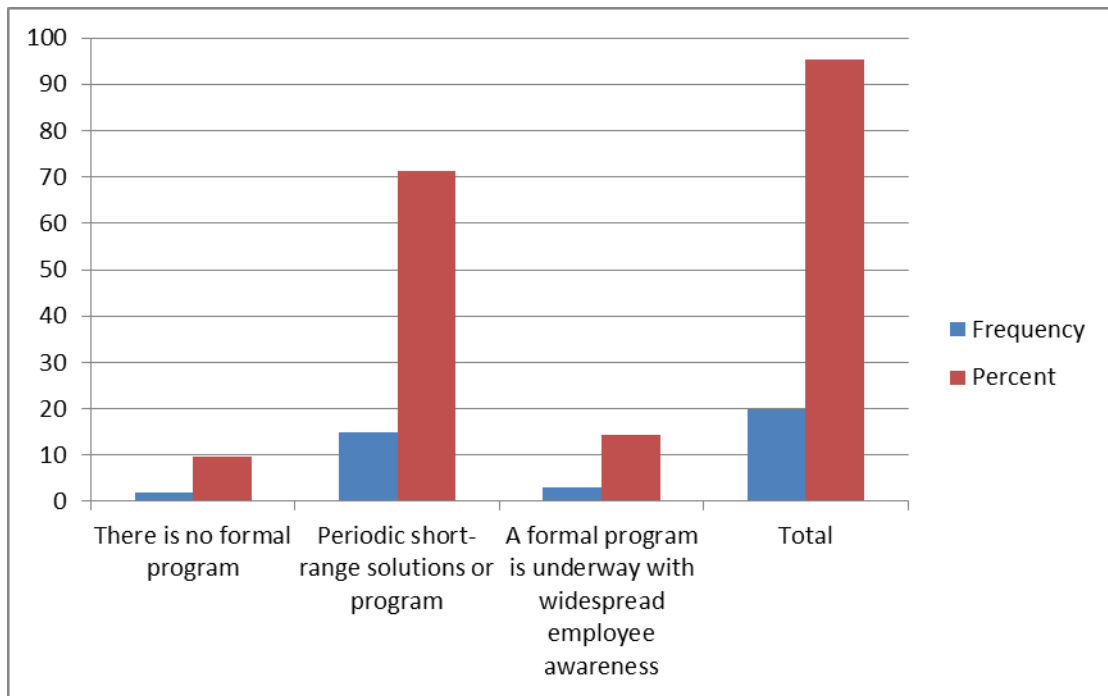


Figure 4.3 How Human Capital Development Program can be describe in Company.

Source: Survey Data

4.3.2 Level of Human Capital Development

As part of the data collection, it was imperative to establish from the respondents the level of human capital development in the construction industry. It considered that knowledge of this kind would provide a basis to understand how this level influences the performance of the organization. Subsequently the respondents were asked to rate the level of frequency of various activities of human capital development from 1 to 5, where 1 represents Not Frequent, 2 represents Less Frequent, 3 represents Neutral, 4 represents Frequent and 5 represents Very Frequent. The result from the analysis is displayed in table 4.2. Based on the five-point Likert scale rating, a criterion is deemed significant if it had a mean of 3.5 or more. Where two or more criteria have the same mean, the one with the lowest standard deviation is assigned the highest significance ranking (see for instance Ahadzie, 2007). Standard deviation values of less than 1.0 indicate consistency

in agreement among the respondents of the reported level of results (see for instance, Field, 2005; Ahadzie, 2007).

The highest ranked variable was providing orientation for new employees. Orientation for new employees had a mean of 3.57 and thus it can be concluded that this is one of the most significant activities done in most construction companies. There was also consistency among the respondents as the standard deviation for this activity was less than 1. The respondents agree with the assertion that one of most frequented activity is the provision of orientation for new employees. This is understandable as most construction companies have an in house style and culture of running their organization. For example despite the fact that most contract documentation have a format to be followed as dictated by the consulting bodies, the way and manner in which documents are prepared, organized and presented varies from one construction company to the other. It is therefore not surprising that this activity is rated as the most significant activity done in most construction firms.

Table 4.2 Frequency of Human Capital Development activities. Source: Survey**Data**

	W	RII	Rank	Mean	Std Dev
Orientation provided for new employees.	75.00	0.71	1	3.57	.811
Performance appraisals are taken seriously	72.00	0.69	2	3.43	.978
Employees who return from training programmes are given opportunities to try out what they have learnt	68.00	0.65	3	3.24	.700
Periodic on the job training for employees	64.00	0.64	4	3.20	.768
Employees with skills to help them move into new roles in the future are equipped	67.00	0.64	5	3.19	.750
Those who go for training go with a clear understanding of the knowledge and skills they are expected to acquire from training	67.00	0.64	5	3.19	.750
Employees who could be further developed or promoted into other roles are identified	66.00	0.63	7	3.14	.793
Training of employees is given due importance	66.00	0.63	7	3.14	.793
There is a well-designed and widely accepted training policy	66.00	0.63	7	3.14	.854
Management is committed to training of employees	64.00	0.61	10	3.05	.740
Future plans are made known to the managerial staff to help them develop their efficiency	64.00	0.61	10	3.05	.805
There is in-house training programme	64.00	0.61	10	3.05	.921
Career opportunities are pointed out to employees	63.00	0.60	13	3.00	.837
There is a thorough job on self- appraisal in terms of reviewing, reflecting and analysing the factors affecting their performance	63.00	0.60	13	3.00	.949
In-house training programmes are handled by competent senior staff	63.00	0.60	13	3.00	1.049
Those who are sponsored for training programmes take the training seriously	62.00	0.59	16	2.95	.921
Employees are sponsored for training programmes on the basis of genuine training needs	61.00	0.58	17	2.90	.995
The qualities of in-house training programmes are excellent	61.00	0.58	17	2.90	.831
Performance gaps are identified and corrected	60.00	0.57	19	2.86	.964
Investment in resources to ensure personnel development	60.00	0.57	19	2.86	.964
New employees receive job-related training	57.00	0.54	21	2.71	.956
Periodic off the job training for employees	53.00	0.50	22	2.52	.680

The results from the study show that the rest of the activities were not deemed to be done frequently in most organisations as they all had a mean score of less than 3.5. This indicates that the level of human capital development is very low in most organisations. It should however be noted that the variable, performance appraisals are taken seriously. It had a mean of 3.43 but a standard deviation close to one. Despite the fact that it had mean close to 3.5 there were some variability in the data. It is interesting to note that even though most companies had orientation for new employees, the variable new employees receive job-related training had a very lower mean (2.71). Some of the reasons advanced for this include, in most construction companies, one of the major requirement for employment of individuals is experience. Most Class A2B2 construction companies look for individuals who have garnered experience already in similar fields before being employed hence new employees are hardly given job-related training. The least rank activity was, periodic off the job training for employees.

4.3.3 Project Performance: Time, Cost and Quality Performance

The project performance of the companies were investigated against three main variables; time, cost and quality. The time performance in the last 5 projects executed by the various companies that responded to the questionnaire was first investigated. Figure 4.4 shows the time performance of the surveyed companies. The results show that most of the companies completed their project on time with others completing before the scheduled time. For the last project identified as project 5 it can be seen that most of the companies completed their projects after the scheduled time. The cost performance was next investigated. The respondents were asked to indicate their ability to meet the contract price at the end of the project. It should be noted that studies have shown the inability of most construction companies to meet project cost. There are mostly cost

overruns. However from the survey the results indicate that most of the respondents indicated their ability to perform well in meeting the expected cost of the project. The results even show that most of the respondents indicated that they performed well by even completing the project below the expected cost. The next stage was the investigation of the quality performance of the various respondents. The results show that most of the respondents indicated that they performed well on quality delivery of their projects. On most projects the results show that construction companies performed in terms of quality as required or as stated in the contract documents. The results from the survey disagree with what most studies indicate (Ofori, 2001; World Bank, 2003; Ahiaga-Dagbui, et al., 2011). Reasons advanced could be that since the respondents are the ones judging themselves, most construction companies would like to boost the image of their companies and may project the image of the company more highly than it should be.



Figure 4.4 Project Performance of Construction Companies. Source Survey Data

4.4 Identifying Challenges to Human Capital Development

This section highlighted on the challenges in identifying human capital development in an organisation.

Table 4.3 Challenges to Human Capital Development. Source: Survey Data

	Weighting	RII	Rank	Mean	Std Dev
Lack of financial resources	84.00	0.80	1	4.00	1.225
Lack of central development and regulatory agency	78.00	0.74	2	3.71	1.102
Cost of Human Capital Development	75.00	0.71	3	3.57	1.076
High employee mobility	75.00	0.71	3	3.57	1.165
Lack of appreciation to the role of human capital development	71.00	0.68	5	3.38	1.161
Fragmentation of the industry	67.00	0.67	6	3.35	1.040
Macho-nature and low-tech of the industry	70.00	0.67	7	3.33	.913
Slowness to change	58.00	0.55	8	2.76	.944
Low level of education	57.00	0.54	9	2.71	1.271

Following the literature review, a number of challenges to human capital development were identified. The respondents were asked to rate how significant these challenges were using the Likert scale. Table 4.3 shows the results of the analysis. It has already been stated that a criterion is deemed significant if it had a mean of 3.5 or more. From the results four out of nine identified challenges had a mean above 3.5 showing how significant challenge they are to the construction industry. These variables include; lack of financial resources, lack of central development and regulatory agency, cost of human capital development and high employee mobility. The least rank variable is low level of education.

The highest ranked challenge is the lack of financial resources. Lack of financial resources had a RII of 0.80 and a mean of 4.00. It should be however observed that the variable, lack of financial resources, had a standard deviation of 1.225 showing a lot of variability in the data. Lack of financial resources is a major restraint to the developmental needs of most construction companies. The relatively high interest rates, inability to secure working capital and the perennial problem of arrears in payments of most construction companies puts a strain on these companies and dissuades them from active investment in human capital development (Government of the Republic of Ghana 2000). The next highest rated challenge is the lack of central development and regulatory agency. This variable had an RII of 0.74 and a mean of 3.71. This shows that this variable is a very significant challenge in the construction industry. Already Fugar et al., (2013) indicated that, there is no central agency with legislative authority to enforce the advancement of skills, experience and professionalism in the Ghanaian construction industry.

The least ranked variables were, slowness to change and low level of education each having an RII of 0.55 and 0.54 respectively. The results indicate that despite this is a challenge to the industry it is not very significant. These variables had a mean of 2.7. The issue of training centres on the intellectual development of artisans who have little or no formal education. Fugar et al., (2013) agrees that human capital development strategy must include general skill training, such as, reading and writing however such training have no direct impact to their current jobs.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Introduction

The aim of this research has been to assess the impact of human capital development on performance of road contractors in Ghana and to achieve this, a number of objectives were set. It has already been presented that human capital development plays a pivotal role in company success. The study has reviewed pertinent literature, surveyed the relevant populations and results of the survey analysed and discussed. In this chapter, the objectives are revisited to bring into light the extent to which the aim of the study has been achieved throughout the various phases of the study based on the findings of the study. The chapter also provides conclusions and recommendations based on the findings of this research work. Again, the limitations that were encountered throughout the study are also brought to fore.

The specific objectives of the study include:

- To determine the link between human capital development and firm's success
- To evaluate human capital development among Ghanaian road contractors and its impact on their performance.
- To identify challenges to human capital development among road contractors in Ghana

These research objectives served as guidelines in achieving the purpose of the study. The objectives will now be discussed and related to the research results.

5.2 Review of Objectives

The main aim of this research, as noted earlier, was to assess the impact of human capital development on performance of road contractors in Ghana. Subsequently research objectives were developed in order to collectively satisfy this aim. Here, the research objectives reconsidered to highlight the extent to which they were accomplished through the various phases of the research.

5.2.1 OBJECTIVE 1: To determine the link between human capital development and firm's success.

To achieve this objective review of pertinent literature was conducted. Previous studies show a positive link between human capital development and firm's success. The research found out that other studies show that human capital development results in an increase problem-solving skills and creative thinking of managers, high and effective performance, corporate commitment among others.

5.2.1 OBJECTIVE 2: To evaluate human capital development among Ghanaian road contractors and its impact on their performance.

From the review of literature various human capital development activities were identified. To achieve objective two, the level of frequency at which these activities are undertaken was surveyed. The performance of the contractors against time, cost and quality was also investigated. The findings from the survey show that orientation for new employees was one of the most significant activities done in most construction companies. Reasons advance for these findings is that most construction companies have an in house style and culture of running their organization. The project performance of the companies were investigated against three main variables; time, cost and quality. The

results show that most of the companies completed their project on time with others completing before the scheduled time. The study also showed that most of the respondents indicated their ability to perform well in meeting the expected cost of the project. The research results further showed that most of the respondents indicated that they performed well by even completing the project below the expected cost. On most projects the results show that construction companies performed in terms of quality as required or as stated in the contract documents. The results from the survey disagree with what most studies indicate (Ofori, 2001; World Bank, 2003; Ahiaga-Dagbui, et al., 2011). Reasons advanced could be that since the respondents are the ones judging themselves, most construction companies would like to boost the image of their companies and may project the image of the company more highly than it should be.

5.2.3 OBJECTIVE 3: To identify challenges to human capital development among road contractors in Ghana

Following the literature review a number of challenges to human capital development were identified. In achieving objective three the respondents were asked to rate how significant these challenges are using the likert scale. Findings indicate that four out of nine identified challenges had a mean above 3.5 showing how significant challenge they are to the construction industry. These variables include; lack of financial resources, lack of central development and regulatory agency, cost of human capital development and high employee mobility. The study findings show that lack of financial resources is a major restraint to the developmental needs of most construction companies. The least ranked variables were slowness to change and low level of education. The results signify that these challenges are not very significant to the industry.

5.3 Recommendations

Human capital development is imperative for the road construction industry. The benefit far outweighs the cost. With the increasing need to provide better quality service by Ghanaian road contractors and also to remain on the competitive edge, human capital development is a must. From the study the following recommendations are made:

- Central development and regulatory agency

The need for central and regulatory agency is re-echoed through this research. There is a need for a central agency with legislative authority to enforce the advancement of skills, experience and professionalism in the Ghanaian construction industry.

- Improving access to finance

From the study it is recommended that access to finance and ability of contractors to secure working capital should be increased.

5.4 Limitations of the Research

This research has limitation as most studies had certain limitations. First of all the study was limited to one category of road contractors in a particular region. This defined scope brought about a very small sample size. This obviously affects the analytical methods used and also generalizations of the findings. Secondly the study explored the performance of the contractors in a very limited way; performance on the immediate 5 construction projects executed. This clearly affects the findings of the results. In addition to the above contractors performance was only explored in terms of project performance. It should be noted that this limitation does not render the research and its findings

irrelevant but rather limits the extent of the application of the findings. The limitations helped to limit the scope of the research.

5.5 Direction for Future Research

This study limitation exposes a number of areas, which need further research attention.

The following recommendations are therefore made for future research:

- The study limitation of a smaller area should be widened to increase the applicability of the research findings.
- The research focused on only project performance of the construction companies. A study looking at the firm's financial performance such as profitability should be looked into for future research.
- The study focus on measuring firm's project performance from the perspective of the contractors themselves and can be broaden to cover consultants working on Ministry of Road and Highway projects.

REFERENCES

- Abdul-Aziz, Abdul-Rashid. (2001), "Site operatives in Malaysia: Examining the foreign local asymmetry". ILO.
- Agbodjah, S., (2008), A Human Resource Management Policy Development (HRMPD) Framework for Large Construction Companies Operating in Ghana. A PhD Thesis Submitted to the School of Graduate Studies, Department of Building Technology, Kwame Nkrumah University of Science and Technology.
- Ahadzie, D.K (2007) .A Model for Predicting the Performance of Project Managers in Mass House Building Projects in Ghana, *PHD Thesis, University of Wolverhamptom, UK*
- Ahiaga-Dagbui, D.D., Fugar, F.D.K, McCarter, W.J. and Adinyira, E., 'Potential risks to international joint ventures in developing economies: the Ghanaian construction industry , In Uwakweh B.O. (Ed.) Procs of the CIBW 107 Conference 1-3 November, 2011 Hanoi –Vietnam, pp. 191-195.
- Anand, Harjit S. (2000), "Critical HRD issues pertaining to construction and other workers in the informal sector". Report prepared for IFP/SEED under a project entitled "Urban Informal Sector Support Programme in India" funded by the ILO and the UNDP.
- Anvuur, A., Kumaraswamy, M. (2006), "Taking Forward Public Procurement Reforms in Ghana", CIB W107 Construction in Developing Economies International Symposium "Construction in Developing Economies: New Issues and Challenges" January 18th – 20th; 2006 – Santiago, Chile
- Assaad, Ragui. (1993). "Formal and informal institutions in the labor market, with applications to the construction sector in Egypt", in *World Development* (Oxford, Pergamon Press), Vol. 21, No. 6, pp. 925-939.
- Assibey-Mensah, G.O. (2008), "Ghana's Construction Industry and Global Competition: A research Note", *Journal of Black Studies*, Sage Publication.
- Baah-Nuakoh, A. 2002. *Studies on the Ghanaian Economy: The Industrial Sector*. Woeli Publishing, Accra.
- Babbie. E. (1999), *The basics of social research*. Belmont, Calif: Wadsworth Publishing
- Bantel, Karen A. (1993) .*Top Team, Environment and Performance Effects on Strategic Planning Formality*. Group and Organization Management

- Bates, T. (1990). Entrepreneur human capital inputs and small business longevity. *The Review of Economics and Statistics*, 72(4), 551-559.
- Becker, B., & Barry, G. (1996). The impact of human resource management on organizational performance: Progress and prospects. *Academy of Management Journal*, 39(4), 779–801.
- Becker, G. (1964). *Human Capital*. Columbia University Press. New York
- Becker, G.S. (1993). *Human Capital: A Theoretical and Empirical Analysis with Special Reference to Education* (3rd ed.). Chicago: University of Chicago Press
- Becker, G. (1962). “Investment in human capital: A theoretical analysis.” *Journal of Political Economy*. 70: 9-49.
- Black, S. and L. Lynch, (1997), *How to Compete: The Impact of Workplace Practices and Information Technology on Productivity*, working paper 6120, National Bureau of Economic Research, Cambridge.
- Black, S. E. and L. M. Lynch (1996), ‘Human Capital Investments and Productivity’, *American Economic Review*, May
- Bolton, M. (1995). *Assessment and Development in Europe: Adding value to individuals and organization*, Maidenhead, McGraw Hill.
- Bontis, N. and Fitz-enz, J. (2002) ‘Intellectual capital ROI: a causal map of human capital antecedents and consequents’, *Journal of Intellectual Capital*, Vol. 3, No. 3, pp.223–247.
- Brannen, J. (1992), *Combining Qualitative and Quantitative Approaches: An Overview*. Brannen, J. *Mixing Methods: Qualitative and Quantitative Research*. Aldershot: Avebury.
- Broadwell, M.M. (1996). Small-business training. In R.L. Craig (Ed.), *The ASTD training and development handbook; A guide to human resource development* (pp. 885-899). New York: McGraw-Hill.
- Brum S., (n.d.) What impact does training have on employee commitment and employee turnover? <http://www.uri.edu/research/lrc/research/papers/Brum-Commitment.pdf> accessed on 26 January 2013.
- Bryman, A. (2004), *Social Research Methods*. [2nd Ed]. Oxford: Oxford University Press.

- Burgess, R. G. (1984) *In the Field: An Introduction to Field Research*. London: Allen and Unwin.
- Business 2011, 'Pozzolana cement factory to be shut down', 27 July viewed 31 January 2013, <http://business.thinkghana.com/pages/industry/201107/55232.php>
- Byrne, S. M., (1999). "The Value of Human Resource Development to an Organization; Providing Technical Assistance to Small Manufacturing Companies" PhD Dissertation submitted to the Faculty of the Virginia Polytechnic Institute and State University in Adult Learning and Human Resource Development, Unpublished
- Chadwick, C. (2007). Examining non-linear relationships between human resource practices and manufacturing performance. *Industrial and Labor Relations Review*, 60(4), 499-521.
- Chen, J.J. (1998), "The characteristics and current status of China's construction industry", *Construction Management and Economics*, Vol. 16 pp.711-19.
- Collis, D.J. and Montgomery, C.A. (1995). Competing on resources: Strategy in the 1990s. *Harvard Business Review*. July & August, pp.118-28.
- Cook, C., Heath, F. and Thompson, R. (2000), "A meta-analysis of response rates in web or internet-based surveys". *Educational and Psychological Measurement*, 60, 821-36.
- Cooper, D.R., & Schindler, P.S. (2003). *Business Research Methods*. (8th ed.). Boston:
- Cooper, D.R. and Schindler, P.S. (2001), *Business Research Methods* (9th ed.). Irwin McGraw-Hill.
- Dansoh, A. (2005). Strategic planning practice of construction firms in Ghana. *Construction Management & Economics*, 23, 163-168.
- Delaney, J. T., & Huselid, M. A. (1996). The impact of human resource management practices on perceptions of organizational performance. *Academy of Management Journal*, 39(4), 949-969
- Dessler, G. (2000). *Human resource management* (8th edition). Prentice Hall, New Jersey.
- Dinsmore P., (2005). *The right projects done right!* John Wiley and Sons

- Dooley, E. (2000). *Intellectual capital in the software industry: An empirical test*. PhD dissertation, College of Business Administration, University of Washington, Tacoma, WA
- Doucouliaagos, C. (1997). The aggregate demand for labor in Australia: A Meta-analysis. *Australian Economic Papers*, Blackwell Publishing.36 (69), 224-42.
- Eyiah, A and Cook. P. (2003), Financing Small and medium Scale constructors in developing Countries: A Ghana case study. *Construction Management and Economics* 21(4), pp 357-376.
- Field, A. (2005). Discovering statistics using SPSS. (2nd ed.). London: Sage.*
- Fisher, C.D, Schoenfeldt, L.F. and Shaw J.B. (2003).*Human resource management (5th edition)*. Houghton Mifflin Co., New York.
- Fitzgerald, L., Johnston, R., Brignall, T. J., Silvestro, R. and Voss, C., (1991). *Perfomance Measurement in Service Businesses, C.I.M.A*
- Frazer, L. and Lawley, M. (2000), *Questionnaire Design and Administration*. Australia: John Wiley and Sons Australia Ltd.
- Fugar, F.D.K., Ashiboe-Mensah, N.A and Adinyira, E. (2013) Human capital theory: implications for Ghanaian construction industry development.
- Fugar, F.D.K, and Salaam, A.(2007), Job Satisfaction among Construction Workers on KNUST infrastructure Project, *Journal of the Ghana Institute of Engineers*, 5(1) Ghana Institute of Engineers.
- Gann, D., Senker, P. (1998), "Construction skills training for the next millennium", *Construction Management and Economics*, Vol. 16 pp.569-80.
- Garavan, T. N., Morley, M., Gunnigle, P., & Collins, E. (2001). Human Capital accumulation: The role of human resource development. *Journal of European Industrial Training*, 25(2/3/4), 48-68.
- Gary R.S. (2001). *Hands-On Training: A Simple and Effective Method for On-the-Job Training*. Colorado, Berrett-Koehler Publishers Retrieved from: www.bkconnection.com.
- Goetz, S. J. & Hu, D. (1996). Economic growth and human capital accumulation: Simultaneity and expended convergence tests. *Economics Letter*, 51, 355-362.

- Government of the Republic of Ghana (2000) Highway Network Master Plan, 2001-2020: Draft Final Report, Executive Summary, Accra.
- Green, F. (1993). The determinants of training of male and female employees in Britain. *Oxford Bulletin of Economics and Statistics*, 55(1), 103-122.
- Grossman, R. J. (2000). Measuring up: Appropriate metrics help HR prove its worth. *HR Magazine*, 45(1), 28–35
- Hambrick, D. C., & Mason, P. A. (1984). Upper echelons: The organization as a reflection of its top managers. *Academy of Management Review*, 9, 193-206.
- Henry, G.T (1990), Practical sampling, Applied Social Research Methods Series, Vol.21, Newbury Park, Calif: Sage Publications.
- Howell, Greg and Koskela, Lauri. (2000). Reforming project management: the role of lean construction. 8th Annual Conference of the International Group for Lean Construction IGLC-8). Brighton, 17 - 19 July 2000.
- Hsu, I. C., Lin, C. Y. Y., Lawler, J. J., & Wu, S. H. (2007). Toward a model of organizational human capital development: Preliminary evidence from Taiwan. *Asia Pacific Business Review*, 13(2), 251-275.
- Huang, G. Z. D., Roy, M. H., Ahmed, Z. U., Heng, J. S. T. & Lim, J. H. M. (2002). Benchmarking the human capital strategies of MNCs in Singapore. *Benchmarking*, 9(4), 357–373.
- Iles, P. A., Mabey, C., & Robertson, I. T. (1990). HRM practices and employee commitment: Possibilities, pitfalls and paradoxes. *British Journal of Management*, 1, 147-157.
- International Labour Organisation (2001). “The construction industry in the twenty-first century: its image, employment prospects and skills requirements”. International Labour Office, Geneva. Tripartite Meeting, Document number TMCIT/2001. Accessed on 30th August, 2013 from <http://www.ilo.org/public/english/dialogue/sector/techmeet/tmcit01/tmcitr.pdf>
- Jayagopal, R. (1988). Human Resource Development - Conceptual Analysis and Strategies. Sterling Publishers Private Limited. New Delhi, India. pp. 30-83.
- Jayawardane, A.K.W., Gunawardena, N.D. (1998), "Construction workers in developing countries: a case study of Sri Lanka", *Construction Management and Economics*, Vol. 16 pp.521-30.
- Kanji, G. (1997). Total quality culture. *Total Quality Management*, 8(6), 417–428

- Kaplan, R.S., and Norton, D.P. (1996), *Translating Strategy into Action: the Balanced Scorecard*. Harvard Business School Press. Boston, Massachusetts.
- Kaplan, R. S. & Norton, D. P. (1994). *Balanced scorecard: Translating strategy into action*. Boston, MA: Harvard Business School Press.
- Kaplan, R. S. & Norton, D. P. (1992). The balanced scorecard: Measures that drive performance. *Harvard Business Review*, 70 (1): 71-79.
- Kashiwari, D.T. (2002), "The difficulty in Implementing Performance Specifications in Construction Industry", Paper submitted at the International Symposium of the Working Committee, CIB W92 (Procurement Systems).
- Koskela, L. and Vrijhoef, R. (2000). "The Prevalent theory of construction is a hindrance for innovation". www.iglc.net/conference/2000/Papers/KoskelaVrijhoef.pdf. Accessed 1/09/08
- Kumaraswamy, M.M. (1997), "Improving industry performance through integrated training programs", *Journal of Professional Issues in Engineering Education and Practice*, Vol. 123 No.3, pp.93-7.
- Lengnick-Hall, M.L. and Lengnick-Hall, C.A. (2003). *Human Resource Management in the Knowledge Economy*, Berrett-Koehler Publishers, Inc, San Francisco.
- Leveson, R (1996) Can Professionals be Multi-skilled? *People Management*, Vol. 2 No. 17, August.
- Levin, H. M. and Kelley, C. (1994). Can education do it along? *Economics of Education Review* 13 (2), 97-108.
- Loosemore, M., Dainty, A. and Lingard, H. (2003) *Human resource management in construction projects: Strategic and operational approaches*. Spon Press, New York.
- Low J and Kalafut, P.C. (2002) "Invisible advantage: How intangibles" are driving business performance. Perseus publishing.
- Lynch, R. L. and Cross, K. F., *Measure Up! Yardsticks for Continuous Improvement*, Basil Blackwell, Cambridge, MA, 1991.
- Republished in R. McNabb and K. Whitfield (eds.), *The Market for Training*, Avebury, pp. 335-355

- Maran, M. (2008). Ethnic diversity on boards of directors and its implications on firm financial performance. *The Journal of International Social Research*, 1(4), 431-445.
- Marimuthu, M., Arokiasamy, L., and Ismail, M. (2009). "Human capital development and its impact on firm performance: Evidence from developmental economics." *The Journal of International Social Research*, Volume 2/8.
- Michel, J. G., and Hambrick, D. C. (1992). Diversification posture and top management team characteristics. *Academy of Management Journal*, 35, 9-37.
- Mincer, J. (1997). The production of human capital and the life cycle of earnings: Variations on a theme. *Journal of Labor Economics*, 15(1), 26-47
- Mohamed, S. "Benchmarking and improving construction productivity," *Benchmarking for Quality Management & Technology* 3(3), 1996, 50-58
- Naidu (ed.): *Contract labour in South Asia*. Geneva, ILO, Bureau for Workers' Activities.
- Neely, A.D., Adams, C. and Kennerly, M. (2002), *The Performance Prism, the Scorecard for Measuring and Managing Business Success*, FT Prentice Hall, London
- Neely, A.D. Kennerley, M.P. and Adams, C.A. (2000), *The New Measurement Crisis: the Performance Prism as a Solution*, Cranfield School of Management, Cranfield.
- Noe, R. A., Hollenbeck, J. R., Gerhart, B., & Wright, P. M. (2003). *Human resource management: Gaining a competitive advantage* (4th ed.). Boston: McGraw-Hil.
- Nordhaug, O. (1998). Competencies specificities in organizations. *International Studies of Management and Organisation*, 28(1), 8-29.
- Oduro-Owusu, K. (2010). *Factors Influencing Teacher Job Satisfaction in Armed, Forces Schools in The Kumasi Metropolis*. MPhil Dissertation submitted to The University of Cape Coast in Educational Administration, Unpublished.
- Ofori, G. (2000), "The knowledge-based economy and construction industries in developing countries", CIB W107 1st International Conference Proceedings: *Creating a Sustainable Construction Industry in Developing Countries*, Stellenbosch, 11-13 November.
- Ofori, G. (2001) *Challenges facing the construction industries of Southern Africa*. Paper presented at the Regional Seminar on "Developing the Construction Industries of Southern Africa", Pretoria, South Africa, 23-25 April.

- Oppenheim, A. N. (1992) Questionnaire Design, Interviewing and Attitude Measurement. [New Edition]. London: Continuum.
- Organization for Economic Co-operation and Development (OECD) (2001). The Well-Being of Nations: The Role of Human and Social Capital. Paris: OECD.
- Pfau, B. N., & Kay, I. T., (2002). The Human Capital Edge: 21 People Management Practices Your Company Must Implement (or Avoid) to Maximize Shareholder Value. New York: McGraw-Hill.
- Rea, L.M. and Parker, R.A. (1997), Designing and conducting survey research: A comprehensive guide. Jossey-Bass, San Francisco (CA).
- Robertson, G.G., Mackinlay, J.D. and Card, S.K.(1991). Cone trees: animated 3D visualizations of hierarchical information. ACM CHI `91 Conference on Human Factors in Computing Systems.
- Rosewarne, S., Shin, J.S., McGrath-Champ, S.S., and Toner, P. (1998). The globalisation of the construction work force ~ the impact on the Australian building and construction industry.
- Rowden, R (1995). 'The role of human resource development in successful small to midsized manufacturing businesses: A comparative case study', Human Resource Development Quarterly, vol.6, no.4, pp.355-373.
- Rowings, J.E., Federle, M.O., Birkland, S.A. (1996), "Characteristics of the craft workforce", Journal of Construction Engineering and Management, Vol. 122 No.1, pp.83-90.
- Sambasivan, M. and Soon, Y. W. (2007), "Causes and effects of delays in Malaysian construction industry", International Journal of Project Management, 25, 517-26.
- Schaeffer, D. R., and Dillman, D.A. (1998), "Development of a standard e-mail methodology: Results of an experiment". Public Opinion Quarterly, 62(3), 378-397.
- Sekaran, U. (2003), Research methods for business: A skill building approach (4th ed.). 605 John Wiley & Sons Inc. Third Avenue: New York.
- Seleim, A., Ashour, A., & Bontis, N. (2007). Human capital and organizational performance: A study of Egyptian software companies. *Management Decision*. 45(4), 789-801.

- Selvarajan, T. T., Ramamoorthy, N., Flood, P. C., Guthrie, J. P., MacCurtain, S., & Liu, W. (2007). The role of human capital philosophy in promoting firm innovativeness and performance: Test of a causal model. *International Journal of Human Resource Management*, 18(8), 1456-1470.
- Schultz, T.W. (1993). The economic importance of human capital in modernization. *Education Economics*, 1(1), 13-19.
- Shrader, R., & Siegal D. S. (2007). Assessing the relationship between human capital and firm performance: Evidence from technology-based new ventures. *Entrepreneurship Theory and Practice*, 893-908.
- Snell, S.A., Lepak, D.P. and Youndt, M.A. (1999). Managing the architecture of intellectual capital: implications for strategic human resource management, in Ferris, G.R. (Ed.). *Research in Personnel and Human Resource Management*. S4 159-74.
- Souza de, Ubiraci. (2000). "Managing workers in production: Overview of labour in the building industry". Translation of a presentation (TG-007), University of São Paulo.
- Spence, M. (1973). Job market signalling. *Quarterly Journal of Economics* 87(3) 355-375
- Strauss, A. L. and Corbin, J. (1998) *Basics of Qualitative Research: Grounded Theory Procedures and Techniques*. [2nd Ed]. Thousand Oaks, CA: Sage.
- Tamkin, P., Giles, L., Campbell, M. and Hillage, J. (2004). *Skills Pay: The contribution of skills to business success*. Institute for Employment Studies.
- Tangen, S. (2004), "Performance Measurement: from philosophy to practice", *International Journal of Productivity and Performance Management*, Vol. 53 No. 8..
- Vaid, K.N. (1999). "Contract labour in the construction industry in India", in D.P.A. Resource Development through International Collaboration between Foreign and Local Contractors in the Greater Accra Region.
- Watson, E., Kumar, K., & Michaelsen, L. (1993). Cultural diversity's impact on interaction process and performance: Comparing homogeneity and diverse task groups. *Academy of Management Journal*, 36, 590-603.

- Wells, J. (2001), "Construction and capital formation in less developed economies: unravelling the informal sector in an African city", *Construction Management and Economics*, Vol. 19 pp.267-74.
- World Bank (2003) Ghana 2003 Country Procurement Assessment Report, Washington, DC: Ghana Country Department, The World Bank
- Yin, R. K. (2003) *Case Study Research: Design and Methods*. Applied Social Research Methods Series. 5. Thousand Oaks, CA: Sage Publications.
- Youndt, M. A., Subramaniam, M., & Snell, S. A. (2004). Intellectual capital profiles: An examination of investments and returns. *Journal of Management Studies*, 41(2), 335–361.
- Yuson, Albert S. (2001). *The Philippine construction industry in the 21st century: Is there aglobalization of the local construction industry?* Report for the ILO (Sectoral Activities Department) and for the IFBWW.

APPENDIX

QUESTIONNAIRE

KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY

COLLEGE OF ARCHITECTURE AND PLANNING

DEPARTMENT OF BUILDING TECHNOLOGY - KUMASI

**ASSESSING THE IMPACT OF HUMAN CAPITAL DEVELOPMENT ON
PERFORMANCE OF ROAD CONTRACTORS IN GHANA**

Dear Respondents,

The researcher is a post-graduate student at the Kwame Nkrumah University of Science and Technology studying for a Master of Science degree in Construction Management.

The researcher is conducting a research into **the impact of human capital development on the performance of road contractors in Ghana.**

I have designed a questionnaire on issues related to this topic. I will really appreciate if you can spend a few minutes of your time filling this questionnaire. The questionnaire will take you about 15 minutes to complete.

Your answers are very important for the proper analyses of the research. Your answers shall be treated confidentially and anonymously. I kindly request you to fill this questionnaire honestly.

In the event of questions or queries, please do not hesitate to contact us. Thank you for your time and valid contribution in advance.

Yours faithfully,

Godfred Deku, MSc Researcher

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Emmanuel Adinyira PhD, BSc, FRRAG MGIOC, ICIOB.

Kwame Nkrumah University of Science and Technology

Kumasi-Ghana.

College of Architecture and Planning

Department of Building Technology

(Research Supervisor)

The questionnaire is divided into three main sections.

SECTION A: (SOCIO-DEMOGRAPHIC CHARACTERISTICS OF THE RESPONDENTS)

Please answer or tick where appropriate

1. Position Held:

Project/Contract Manager Civil Engineer Materials Engineer
 Managing Director Others please specify

.....

2. How long have you been working in this institution

0- 5 yrs 6 -10 yrs 11 – 15 yrs 16 – 20 yrs 21 yrs& above

3. Age Group:

18-30 yrs 31-40 yrs 41-50yrs 51-60yrs 61- 70yrs

4. What is your highest academic qualification?

Postgraduate First Degree HND/ Diploma
Technician (CTC I, CTC II, CTC III) Otherspls specify.....

5. What is professional qualification? Msc Building Technology

6. How long has your organization been?

0 – 5 yrs 6 -10 yrs 11 – 15 yrs 15 – 20 yrs
20 yrs and above

SECTION B: LEVEL OF HUMAN CAPITAL DEVELOPMENT IN THE GHANAIAN ROAD CONSTRUCTION INDUSTRY

Please answer or tick where appropriate

1. Does your company have a program for human capital development?

Already implemented In preparation Not planned

2. Your organisations human capital development program can be described as?

There is no formal program
 Periodic short-range solutions or program
 A formal program is underway with widespread employee awareness
 Others (please specify).....

Please, answer the following questions by indicating to what extent they apply or occur in your operation

Not very frequent– (1); Not frequent - (2); Neutral– (3); Frequent– (4); Very frequent – (5)

Human capital development		1	2	3	4	5
3	There is a process in place to ensure new employees receive job-related training.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	There is a process in place to provide orientation for new employees.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	There is a process in place to identify employees who could be further developed or promoted into other roles.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6	There is a process in place to equip employees with skills to help them move into new roles in the future.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	There is a process in place to identify and correct performance gaps.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	There is a well-designed and widely accepted training policy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	The management is willing to invest resources to ensure personnel development	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10	The company has a periodic on the job training for employees	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11	The company has a periodic off the job training for employees	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12	Employees who return from training programmes are given opportunities to try out what they have learnt	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13	Those who are sponsored for training programmes take the training seriously	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14	Those who go for training go with a clear understanding of the knowledge and skills they are expected to acquire from training	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15	Employees are sponsored for training programmes on the basis of genuine training needs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16	Career opportunities are pointed out to employees	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17	Management is committed to training of employees	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

18	Training of employees is given due importance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
19	Future plans are made known to the managerial staff to help them develop their efficiency	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
20	Performance appraisals are taken seriously	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
21	There is a thorough job on self- appraisal in terms of reviewing, reflecting and analyzing the factors affecting their performance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
22	There is in-house training programme	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
23	In-house training programmes are handled by competent senior staff	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
24	The qualities of in-house training programmes are excellent	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

CONTRACTOR PERFORMANCE ON PROJECT TIME, QUALITY AND COST

Please use the table below to provide some details about your firm’s performance in terms of time, cost and quality on your last five completed projects.

Note: the variance = proposed time/cost – final time/cost x 100

Proposed time/cost

PROJECT	UNDER SCHEDULE	ON SCHEDULE	TIME OVERRUN
1			
2			
3			
4			
5			
PROJECT	UNDER BUDGET	ON BUDGET	COST OVERRUN
1			
2			
3			
4			
5			
PROJECT	BELOW QUALITY SPECIFIED	ABOVE QUALITY SPECIFIED	AS REQUIRED
1			
2			
3			
4			
5			

SECTION C: IDENTIFYING CHALLENGES TO HUMAN CAPITAL DEVELOPMENT

How significant are these challenges in identifying human capital development in your organization.

Please use the scale below to answer the following questions.

Not Significant challenges – (1); Not very Significant Challenges - (2); Neutral– (3); Significant challenges– (4); Very Significant challenges – (5)

Challenges in Human capital development		1	2	3	4	5
1	Lack of financial resources	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2	Lack of central development and regulatory agency	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3	Cost of Human Capital Development	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4	Lack of appreciation to the role of human capital development	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5	Macho-nature and low-tech of the industry	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6	Slowness to change	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7	High employee mobility	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8	Low level of education	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9	Fragmentation of the industry	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

10. How will you describe human capital development in road construction industry in Ghana?

- a) it is important, it makes a firm competitive, and improves employee performance
- b) it is not very necessary and so can be overlooked
- c) I don't know

Please do you have any recommendation for the development of human capital in the road construction industry? Kindly indicate below

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THANK YOU VERY MUCH FOR YOUR TIME!!!