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**KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY
COLLEGE OF ARCHITECTURE AND PLANNING
DEPARTMENT OF BUILDING TECHNOLOGY**

**EFFECTS OF MANAGEMENT PRACTICES ON THE GROWTH OF SMALL
AND MEDIUM SCALE CONTRACTORS IN NORTHERN REGION OF GHANA.**

BY

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(Bsc. Building Technology)**

**A Thesis submitted to the Department of Building Technology, College of
Architecture and Planning, in partial fulfilment of the requirements for the award
of**

Master of Science (MSc) in Construction Management

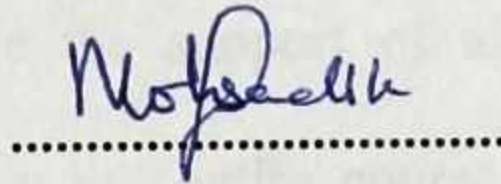
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DECLARATION

I hereby declare that this submission is my own work towards the MSc. and that, to the best of my knowledge, it contains no material previously published by another person or 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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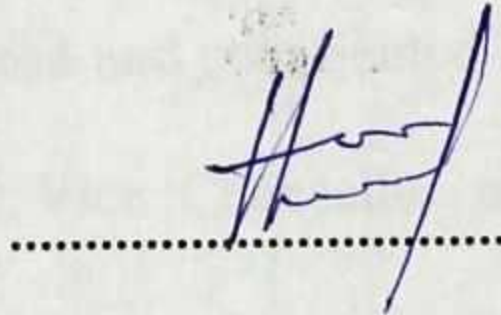
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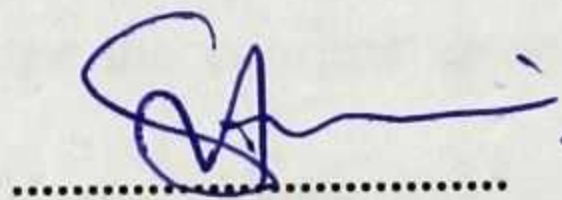
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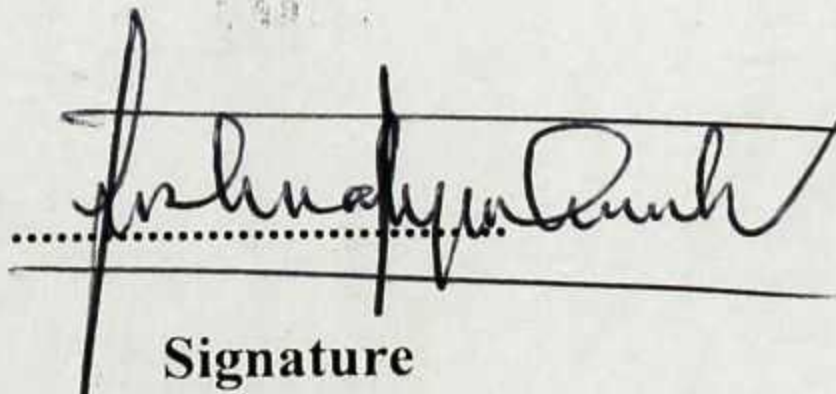
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ABSTRACT

Small and medium enterprises are considered as the engine of economic growth of most developing countries and, Ghana is not exempted. However, management practices of these enterprises faces challenges especially the road sector of the construction industry that makes them not able to grow and to play this role effectively. Management capability is one of the major criteria for contractor development which ultimately would lead to growth and expansion of small and medium construction firms to larger ones. Recent studies have shown that tremendous growth can be achieved with enhanced management practices. The present study looked at the effect of key management practices on growth and how the two are closely related. An interview guide was prepared and used as a research tool for the study. An in-depth face-to-face interview was conducted on contractors and consultants in the road sector in northern region of Ghana. A purposive non random sampling was used to select a sample of 30 contractors and 6 consultants working closely. Data collected from the interview was analysed qualitatively through descriptive statistics. The management practices identified with contractors include Organizational structure, Operations Management, Financial Management, Human Resource Management, Management of Projects, Strategic Management, Plant and Equipment Management. On average, 50% of the contractors do not adhere to these management practices. It was again noted that growth can be measured with the indicators such as Company Assets, Staff strength, ongoing projects, turnover and client confidence. Finally, growth of SME contractors was found to directly relate to good management practices.

It was therefore recommended that there must be policy changes to support SME contractors management practices in order to achieve growth in the sector for national and international.

DEDICATION

I dedicate this work to my dear mother (deceased), Madam Adisa Abdulai and my lovely daughter Fatima Kataali Mahama and her two brothers Safian P. Mahama and Danaa Osman Mahama.

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CHAPTER ONE

GENERAL INTRODUCTION

1.1 Background of Study

The construction industry plays an important role in any economy and its activities are also vital to the achievement of the socio-economic development goals of providing shelter, infrastructure and employment (Owusu, 2010).

Construction processes in developing countries share similar characteristics in terms of the adoption of technology, construction methods, cultural environments and regulations (Hillebrandt 1999, Ofori 1999, Thomas 2002). These aspects of the industry in developing countries make the management of construction projects a difficult one (Kheni, 2008). In developing countries, there are fewer large construction businesses compared with small and medium scale construction businesses (SMEs) (Addo-Abedi 1999, Kenny 2007). Due to the important role SMEs play in the economies of developing countries, they have received attention of governments in developing countries (Forstater, et al., 2006; Raynard and Forstater 2002).

Despite the attempts at industrialisation through import substitution and creation of enabling environment, the rate of industrialisation remains low (Kheni, 2008). This situation has created a difficulty in assessing the effectiveness of development plans in Ghana.

The private sector has been the focus of economic policies aimed at creating an environment for private sector-led growth. However, response of the sector to various initiatives aimed at increasing productivity of the sector is slow. SMEs in particular, are not competitive and many of them only operate within the domestic market. Ghanaian

SMEs face constraints to their development mainly originating from the socio-cultural and economic situation of the country. These constraints posed by the contextual environment have serious implications for the management of construction projects within construction SMEs (Kheni, 2008).

Small and medium enterprises (SMEs) have been considered as the engine of economic growth and for promoting equitable development. The major advantage of the sector is its employment potential at low capital cost. (Aremu, 2011).

Ahadzie (2009) also held a similar view that the Ghanaian Construction Industry (GCI) (as in many other construction economies) holds the key to the development of the nation and contributes to the national socio-economic development by providing significant employment opportunities for non-skilled and skilled levels.

In spite all these attributes about the small and medium sized enterprises, their ability to develop and expand to larger firms has been a challenge over the years to various governments. According to Ofori (2001), citing Hillebrandt (1997), even though, problems of construction industries in developing countries are well researched and recommended proposals implemented, the results have been disappointing and the problems have persisted.

There is no doubt that, since independence, various Governments have attempted to introduce modernity and professionalism into improving local construction capacity to make it more competitive. In Ghana for instance, between 1988 and 1998 the government through the Building and Road Research Institute (BRRI) instituted a Management Improvement Programme aimed at improving the management capacity of small scale contractors. The programme was also aimed at equipping the contractors with basic techniques to be pursued to achieve improved performance at the operational level that

enhances the growth of small scale construction in Ghana. When current standards are examined within the context of contemporary global construction practices, the Ghanaian industry could be described as being at the cross road. After 50 years of independence, typical rural construction practices remain virtually unchanged from what pertained in colonial times (Ahadzie, 2010). Alternatively, while urban construction has been infused with modern tenets, the forms of construction practices still appear relatively very elementary, technologically unsophisticated and outmoded.

Although research on the direct constraints facing construction SMEs in developing countries repeatedly identifies financial issues as a very high priority for entrepreneurs, it is clear that, in most cases, finance alone will not bring about sustainable enterprise development. The subject of assessing contractor development has become a matter of concern to several countries, thereby necessitating the need to improve construction best practices in the industry (Ofori, 2000; Beatham et al., 2004).

According to Prinloo & Nkosi (2001), small and medium contractors have only accumulated basic knowledge in management which makes them inadequate for managing more complex contracts. It is therefore imperative on small and medium contractors to equip themselves with some tenets of appropriate construction practices that will help them develop to the level of large and very competitive scale firms. But the question is, whether current practices by small and medium contractors are relevant to equip their capacity to favourably compete.

1.2 Statement of Problem

There are several works on the factors affecting contractor development and their impact on project success (Amoah et al., 2011). However, extant review of literature reveals that, many of these studies often focus on the relatively large companies which often undertake

the very large projects in the major cities of the economy (Ahadzie, 1995; Owusu-Tawiah, 1998; Fugar and Agyarkwa-Baah, 2010).

A number of researchers (Rwelamila, 2002; Ngowi and Ofori, 2001; Mashamba, 2001) agree that an outlook of the SMEs in Southern African construction industries needs serious attention and Ghana is no exception.

Firm dynamics is sizeable: several studies suggest that about 10 to 15 percent of small firms are either created or closed down every year in industrialised and emerging economies. (Bartelsman et al 2004). But development according to Chan's and Kumaraswamy's (2002) depends on several factors such as size, type, location and other construction management practices.

Aje et al (2009), in their study indicated that management capability is an important criterion for evaluating potential performance of construction contractors during prequalification and tender evaluation. The study further revealed that contractors' management capability has significant impact on cost and time performance with a p-value of 0.042 and 0.039, respectively. This therefore corroborates the reason why management capability was considered so important among the main criteria for contractors' prequalification in Nigeria. The study also shows that construction project cost and time performance is correlated with contractors' management capability. This is because effective management of the organization brings about teamwork resulting into effective project delivery to time, within cost and to the required quality standard.

Hence, with the allusion of the above assertion, management capability is a major factor that enhances the development of contractors. It is against this background that this study seeks to appraise the effect of key management practices on the growth of small and medium scale road contractors in Northern Region of Ghana.

1.3 Aim and Objectives

1.3.1 Aim of Study

The aim of the study was to identify key management practices and document their effects on the growth of Small and Medium Scale Road contractors.

1.3.2 Objectives

To achieve the above aim, the following objectives were set:

1. To identify management practices that influence their growth;
2. Identify growth indicators of these construction firms; and
3. Linkage between management practices and growth of firms .

1.4 Outline of Methodology

In order to appraise construction practices by small and medium scale road contractors, it was important to put these categories of contractors in the centre of the research. There are two main categories of contractors in Ghana. The first group made up of building and civil engineering contractors who operate with licence from Ministry of Water Resources, Works and Housing (MOWRWH). The second group are the road contractors who operate with licence from Ministry of Roads and Highways (MRH). (Eyiah, and Cook, 2003 Dansoh, 2005).

The data for the study were collected through a well structured interview guide administered on small and medium scale road contractors as well as consultants of the road departments in the study area. The interview guide was developed through review of literature on key management practices in the industry. Prior to the interviews, pilot study was carried out using the initial draft of the interview guide to ensure that the research

instrument establishes the most productive form of data analysis. The input and the results generated from the pilot study were used to refine the interview guide before the industry wide survey was carried out.

The target population for this study was the small and medium scale road contractors of classes A4B4 and A3B3. In all thirty-six (36) people were interviewed made up of fifteen (15) classes A4B4, fifteen (15) A3B3 and six (6) consultants also made up of two (2) each from Ghana Highway Authority, Urban and Feeder Roads Departments. The interview guide was in two categories; the first category was targeted at these classes of contractors. The second was the government consultants in the road sector who supervises the works of these contractors in the northern region. In order to have a defined sample size, the list of all these classes of contractors was sourced from the offices of the Association of Road Contractors, Ghana Highway Authority, Departments of Urban and Feeder Roads in Northern Region of Ghana. It was discovered from the list presented by the three consulting departments to be intersecting. There were some contractors whose names appeared on the list of all the departments; many appeared in two departments, only a few appeared once in a department. The list of these contractors obtained was compared to the list of contractors in good standing at the website of Ministry of Roads and Transport as at 18th October 2012 (mrt.gov.gh). The total number of these classes of Contractors and who are in good standing as at this date and working in the region was Ninety- eight (98). This was made up of fifty-seven (57) A4B4 and forty-five (45) A3B3 contractors.

It was from this population that a probability sampling was carried out to select the research sample. Interview guide was the only tool used to gather the information. The research survey indicated the use of qualitative approach to the data collection as an appropriate method for the research.

1.5 Scope

The interview guide was used to collect the views of small and medium scale contractors and consultants of Ghana Highway Authority, Departments of Feeder and Urban Roads in the Northern region of Ghana who are the main government consultants in the road sector. The study focused on key management practices a tool for assessing the growth of small and medium scale road contractors in Ghana. The study was, nevertheless, limited to small and medium scale road contractors of classification of A4B4 and A3B3 in Northern Region of Ghana, though it fairly expresses the views of small and medium scale road contractors in Ghana.

Northern region is the largest region in Ghana in terms of land size and therefore also has a large road network under construction. The remote nature of the region as compared to the southern sector has fewer opportunities in terms of business transactions and therefore for a firm to grow, it means a lot more of management input. However, the reality is that, most construction firms in the northern region start as sole proprietors and either die or grow to become large companies compared to the south where most businesses start as a result of individuals coming together with a large capital base to start as large firms.

Notwithstanding, the researcher is also familiar with the area and therefore will be able to source credible information and data. Lastly most of the construction SMEs in that region are managed by illiterates and the researcher comes from that area and speaks the local dialect fluently and therefore does not need to communicate with the contractors through an interpreter. This ensured the credibility of the information and that it has not been diluted.

1.6 Justification of Study

The construction industry comprises many different participants including clients, consultants and construction businesses that perform different roles from conception to commissioning of a typical construction project. Construction businesses are responsible for the execution of the project in accordance with contract documents. They constitute the largest and highly regulated group of actors in the construction industry of many countries. In developing countries, there are fewer large construction businesses compared with small and medium scale construction businesses (SMEs) (Addo-Abedi 1999, Kenny 2007). SMEs play an important role in the economies of developing countries. Consequently, they have received attention of governments in developing countries (Forstater et al. 2006, Raynard and Forstater 2002). To achieve this role, the management capability of these SMEs has to be brought to bear.

Generally, resources are being managed by contractors to satisfy clients' requirement, therefore contractors' management capability enhances project performance and hence the need for contractors' to improve their managerial capability to deliver construction projects on schedule (Aje et al, 2009). It was therefore necessary to examine the effects of some key management practices exhibited by these small and medium road contractors in their quest to grow and develop to larger firms.

1.7 Limitations of the Study

The researcher would have liked to cover all small and medium scale contractors in northern region however, this was not possible since most of these contractors did not have offices and some addresses given were misleading. Those that were interviewed

cooperated but there were few who did not give much attention since the questions were detailed and needed time.

1.8 Organization of the Study

The study has been organized into five chapters.

Chapter one is the general introduction of the study and it is grouped into:

- introduction to the study which consist of statement of the problem;
- research goals which contains the aim, objectives and research questions of the study;
- outline of methodology of the study; and
- Justification of the study.

Chapter two of this study deals with relevant literature reviewed from text books, articles and journals, and internet sources. This is followed by chapter three which contained the research design adopted, the data requirement and the source of data, the data collection tools employed, the sampling technique employed. Chapter four dealt with presentation and analysis of the collected data and its discussions. Finally, chapter six is the concluding part and hence the end product of the study. Again the chapter is tied closely to some portions of the general introduction of this study.

1.9 Summary

The introduction of the study including the research goals, the outline of the methodology and the guide to the study has been presented. The next chapter, (i.e. chapter two) introduces a critical review of the various key construction management practices in the construction industry in Ghana.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The concept of organizational growth (OG) is often used to represent the ability of an organization to continuously improve. French and Bell (1998) provided an academic and comprehensive definition of OG as “a long-term effort, led and supported by top management, to improve an organization’s visioning, empowerment, learning, and problem solving processes”. This growth according to French and Bell in the same year through an ongoing, collaborative management of organizational culture using the consultant/facilitator role and the theory and technology of applied behaviour science.

On a day-to-day level, a shorthand definition of OG is “an ongoing, thoughtfully planned effort by all stakeholders, fulfils its mission, and approaches its vision”. OG is a discipline built on both academic research and real-world practice in the applications of research findings all focussed on improving the effectiveness of individuals, groups, and organizations. It encompasses a wide range of topics, including organizational behaviour, group dynamics, facilitation, continuous improvement, learning organizations, organizational learning, and appreciative inquiry.

2.1.1 Small and Medium Scale Enterprises

Small and medium-size enterprises (SMEs) are considered as one of the important factors to work an economic miracle in many countries and regions. According to established practice in the world, the strength of an economic power lies not only in the success of large enterprises, but also in SMEs. In China, SMEs have contributed a lot to the country's modernization drive. (Fan Jie, 2004)

Aremu (2011) reports that Small and medium enterprises (SMEs) have been considered as the engine of economic growth and for promoting equitable development. The major advantage of the sector is its employment potential at low capital cost.

According to Amoah et al (2011), small contractors who constitute over 90% of the job market, have often been left out of the sampling frame. Yet, although these firms are classified as small, in financial terms, they collectively contribute substantially to overall construction GDP, especially in the development of decentralised and local government areas. Indeed, these small firms could also be accounting for over 50% (cost-wise) of all building materials production and nearly 80% of all short-term employment (including casual labour), especially for unskilled workers in many deprived communities in Ghana (drawing from Ganessian, 1983; GSTDP, 2010). (Ghana Skills and Technology Development Project).

2.1.2 Access to Funding

For small contractors, like all small businesses, the main problem is lack of access to and difficulty in obtaining credit. Compared to other small businesses, small construction companies have a high financial turnover and hence a larger need for short term working capital. This is due to the amount of materials required; relatively large numbers of staff wages and equipment purchase or hire costs. They also need long term capital to cover the costs of expanding the business and financing the purchase and depreciation of equipment.

2.1.3 Contractor Development

Ahadzie, (2009) also held a similar view that the Ghanaian Construction Industry (GCI) (as in many other construction economies) holds the key to the development of the nation

and contributes to the national socio-economic development by providing significant employment opportunities at non-skilled and skilled levels.

The subject of assessing contractor development has become a matter of concern to several countries, thereby necessitating the need to improve construction best practices in the industry. (Ofori, 2000; Beatham et al., 2004). Contractor performance is critical to the success of any construction project as it is contractors who convert designs into practical reality (Xiano and Proverbs, 2005).

Nevertheless, there are pros and cons associated with SMEs. Social and economically, SMEs are a strong base for the economy of any country. For instance, 99.8% and 90% of all companies are SMEs in the UK and Europe, respectively. The European Commission 2006 stated that SMEs in the industrial sector could fluctuate according to macroeconomic indicators like the GDP due to their high indices of investment and contribution to the growth in employment.

2.1.4 Technological Consideration

Innovation is about turning knowledge into economic activity that results in growth. It is a process of discovery, learning, and application of new technologies and techniques from many sources. It is an important driver of economic and productivity growth, and ultimately of the improvement in living standards (Tang, 2006). Since J.A.Schumpeter firstly came up with the innovation concept in 1820s, a lot of prominence has been attached to the analyses related to technology innovation performance, division of innovation stage, characteristic of technology innovation and its function (Kheni, 2008).

Over the last two decades the relationship between innovation and geography has become an important theme for research into economic growth.

While the link between innovation and growth have long been discussed (Nelson and Winter, 1982), more recently the work of Porter (1990), Scott (1988), Acs (2002) has focused attention on the ways in which localized knowledge and technology spillovers may promote innovation. However, Studies of this sort, specifically in relationship between the technology innovation behavior by SMEs and the regional innovation environment are largely absent from the innovation literature within economic geography.

2.1.5 Role of SMEs in Development

It is now widely accepted that SMEs played a substantial role in the development of many regions both in China and abroad (Bresnahan & Gambardella, 2004). During the tenth Five-year Plan, China's economy registered an annual growth of 9.5% on average, compared to 28% for SMEs above the designated size. Since the reform and open policy in the last two decades, SMEs have been the important part of Guangdong economy. In 2006, SMEs account for over 99% of Guangdong enterprises in total, producing 66% of Gross Industrial Output Value and paying 70% of the total taxation. Besides, they provide over 80% of jobs in cities and towns, acting positively in reducing employment pressure. Technology innovation is regarded as a tool for strengthening the competitiveness of nation (Pawan Sikka, 1998). SMEs are main force in technological innovation.

Small and medium-sized enterprises (SMEs) and entrepreneurial companies operating in today's knowledge-based society face new strategic challenges that hinder their growth. Entrepreneurs have to deal with issues of knowledge acquisition and should be able to find a balance between exploitation and exploration activities (March, 1991; Koza and Lewin, 2000). Moreover, SMEs' performance can improve if they adopt a more active learning orientation (Sadler-Smith et al., 2001).

According to Nooteboom (1994), SME characteristics often hamper the identification and leverage of resources and competencies needed within the organization in order to yield new opportunities. Within the academic literature, alliances and networks are presented as viable development options to compensate for internal knowledge deficiencies.

2.1.6 Theoretical background

Management is the co-ordination of all resources through the process of planning, organizing, leading and controlling in order to attain process objectives (Abiola, 2000). It entails planning, organizing, staffing, directing, and dedicating resources and expenditure of fund in order to produce a concept, a product, an activity or a project. Contractors' performance is crucial to success of any construction project as it is the contractors who convert design into practical reality. Therefore, a potential contractor must demonstrate management responsibilities and execution capabilities in order to meet this requirement that would as well go a long way to realise growth and development.

2.1.7 General Definition of SMEs

There has been no commonly accepted definition of SMEs (Curran 1999:6-7, Curran and Blackburn 2001:8, Harper 1984, Storey 1994, Walters 2001:4). Definitions vary from one country or industrial sector to another. Researchers and governments employ various definitions to suit their purposes. Definitions are generally based on quantitative and or qualitative criteria. Quantitative definitions adopt employee numbers, turnover, value of fixed assets, and balance sheet total whilst qualitative definitions adopt ownership, responsibility, flexibility, level of autonomy and market share. Curran (1999:7) cites the different size distribution of businesses of different sectors as the main reason for the variation in SME definition.

2.1.8 The Ghanaian Perspective

The definition of SMEs in the Ghanaian context, like in the UK and many other countries, varies between researchers and government institutions of the country. The most commonly adopted criteria in SME definitions in Ghana are number of employees and value of fixed assets with differing thresholds of these criteria. Researchers generally overcome the problem of definition by coming up with their own arbitrary definition to suit their research problem. While this may help answer their research question(s), it could reduce the comparability of results and the validation of the findings of research adopting similar definitions. Curran and Blackburn (2001:21-22) suggest good practice guidelines for researchers seeking to define SMEs:

- a literature search should be conducted on how other researchers have defined SMEs in order to avoid obvious mistakes in approach and to increase comparability of results with past research relevant to the study at hand;
- definitions such as turnover, number of vehicles, number of hospital beds, while they may be used, care must be exercised in ensuring sampling frames are accurate and appropriate;
- It is recommended, where possible, to ground definitions in the culture of the sector (s) being investigated;
- Definitions adopted may depend on available sampling frames;
- Having decided on preliminary definition of SMEs, it is recommended to check resulting sample against known populations to assess whether the definition is producing a sample which is representative; and

Where the research employs secondary data, it is recommended to check whether coding categories if any, are employed in the secondary data analyses can be converted to produce a suitable definition of SMEs.

2.1.9 What Constitute SMEs

Ghana Statistical Service (GSS) categorization of SMEs has it that Firms with less than 10 employees are considered small and those with more than 10 employees are medium or large. National Board for Small Scale Industries (NBSSI) (1996) Micro enterprises are defined as enterprises employing 1-5 workers with fixed assets (excluding realty) of value not exceeding \$10,000 and Small Scale Enterprises as those that employ between 6-29 persons or have fixed assets (excluding realty) of value \$100,000 Bank of Ghana under the Funds for Small and Medium Enterprises Development (FUSMED) (Boch- Ocansey 1996) Defined micro and small enterprises as businesses with assets of 5 million cedis and 25 million cedis in constant 1988 prices (US \$20,000 and US \$100,000 equivalent) respectively Ayeetey et al. (1994) defined micro businesses as businesses employing 1-9 persons; small as those employing 10-29 persons; and medium as those which employ 30-40 persons Mensah (2004) Defined micro businesses as businesses employing up to 5 persons with fixed assets (excluding realty) not exceeding \$10,000 in value; Small businesses as those which employ 6-29 with fixed assets (excluding realty) up to \$100,000 in value; and Medium businesses as those, which employ 30-99 persons with, fixed assets of up to \$1 million in value. Eyiah and Cook (2003), Eyiah (2004) Defined construction SMEs as contractors registered in financial classes 2, 3, and 4 Construction businesses in developing countries have unique characteristics that should be taken into account when defining construction SMEs. Eyiah and Cook (2003) consider contractors in classes 2, 3, and 4 to have similar characteristics, being family businesses and operate as domestic contractors. This definition has disadvantages. Firstly, the definition limits comparability of research results on SMEs since many definitions employ number of employees. Secondly financial classifications are subject to review by government institutions that institute them. Thirdly, definitions of financial class employed by the

Ministry of Road Transport and Ministry of Works and Housing differ on the minimum amount for each financial category. Thus a contractor regarded as class 3 by the former ministry may belong to a different financial class under the latter ministry's classification scheme.

Domestic construction businesses operate within the domestic construction market and are managed as family businesses, rarely employing up to 200 employees (Addo-Abedi 1999).

Thus, domestic construction contractors in Ghana may conveniently be regarded as SMEs based on the similar characteristics they possess. This study therefore defines SMEs as family run domestic contractors with the following thresholds relating to small and medium construction businesses:

- An upper threshold of 199 employees and a lower threshold of 30 employees are adopted for medium-sized construction businesses;
- Small businesses are ones which employ 10-29 persons; and
- Micro businesses are construction businesses whose number of employees do not exceed 10.

2.2 Characteristics of Small and medium Scale Contractors in Ghana

In Ghana, the agency responsible for the registration of contractors (i.e., building or civil contractors) is the Ministry of Water Resources, Works and Housing (MWRWH). The MWRWH does this in collaboration with the Registrar General's Department under Act 179 (1963) of the companies' registration code.

2.2.1 Contractor Classification in Ghana

On registration, contractors are classified, based on a number of guidelines, including the following: plant equipment holding, financial standing, previous performance and technical expertise.

In Ghana, two bodies are mandated to assess and classify contractors according to laid down regulations. The two bodies are Ministry of Water Resources Works and Housing (MWRWH) and the Ministry of Roads and Highways (MRH). The MWRWH classifies contractors into D and K. D being for General Building Works and K for General Civil Works. The MRH classifies contractors as A, B, C, S and M. Class A contractors are for Roads, Airport Construction and Related Structures. B is for Bridges, Culverts and Other Structures. Class C is for Labour Based Road Works, S is for Steel, Bridges and Structures; and M for Maintenance and Rehabilitation. The Ministries further identify these contractors based on their financial classes as 1, 2, 3 and 4 with 1 being the highest and 4 the lowest financial standing. Practically, a contractor could be identified as A1B1, A2B2, A3B3, A4B4 and D1K1, D2K2, D3K3, D4K4 (MRH and MWRWH 2001); and each category depicts the type of work it can undertake. A1B1 and A2B2 classified as larger firms, A3B3 as medium and A4B4 as small firms.

According to MWRWH bulletin, inclusion of a contractor's name in the Ministry's classification register is not compulsory, but then it is only those who are duly registered who can tender for government contracts. (Eyiah, A.K and Cook, 2003; Dansoh, 2005).

The classification is summarised on Table 2.1 below:

Table 2.1 Classification of Ghanaian Contractors

Category	Description
A	Roads, Airport, and Related Structure
B	Bridges, Culverts and Other Structure
C	Labour Based Road Works
S	Steel, Bridges and Structures
M	Maintenance and Rehabilitation
D	General Building WORKS
K	General Civil Works

Source: Ministry of Water Resources and Ministry of Roads & Highways (Ghana)

2.2.2 SMEs and Challenges

A feature of SMEs in the Ghanaian Construction Industry (GCI) is that, they are often believed to be one-man enterprises, having low financial and capital base and also lacking the requisite managerial skills to adequately face up to the numerous and difficult challenges they constantly have to encounter in a typical developing economy such as Ghana's (cf. Ahadzie, 2007).

Notwithstanding the difficulties however, these small firms tend to have a very wide geographical dispersion championing local government development in the many rural and remotest parts of Ghana. Official statistics indicates that, indeed, these so-called small firms represent over 95% of contractors operating in the economy. In this respect, their activities are useful in stimulating growth in many rural and deprived communities where the government is rigorously championing local development.

Within the foregoing context, it is also to be noted that, the dominant role of small firms by classification in the Ghanaian construction sector is not by accident (drawing from Ganesan, 1983; Hillebrandt, 1990; Wells, 2007). Typically, construction is essentially a large industry of small firms in all construction economies (Fellows, *et al.*, 1983; Wells, 2007). Among others, this dominance of small-scale contractors is dictated by particular characteristics of the industry, such as the wide dispersion of the demand, flexibility in the scale of production, lack of standardization of materials, the effect of climatic controls on the use of materials, some of which can be very bulky; the low capital requirement for entry, especially for craft-based jobs (see, for instance, Ganesan, 1983; Hillebrandt, 1990; Wells, 2007).

The issue bordering on the managerial capacity for the SMEs is also quite revealing. Thus, it is striking that the SMEs are admitting to their own inadequacies, although this is also a long-held belief among many industry analysts. The reality is that, many SMEs operate a personalised style of management without due regard to effective modern management practices and recruitment methods (Edmonds and Miles, 1984; GSTDP, 2010).

2.2.3 Competitiveness of SMEs

Small and medium enterprises face numerous challenges that make it difficult for them to grow and compete with larger firms. However the reality is that, these firms must be competitive, if they are to survive and grow in an increasingly difficult business environment such as those pertaining in many developing countries. As noted by numerous writers in the past (Ganesan, 1983; Ofori, 1991; Zawdie and Lanford, 2000), the most pressing problems facing small-scale contractors in many developing countries are the same, namely, lack of finance, low labour productivity, shrinking demand arising

from fluctuations in national construction output, capacity under-utilisation and inadequate technical assistance required for rationalisation. Interestingly, despite some modest improvement made in the economy of many developing countries, such as Ghana, in recent times (GSTDP, 2010), the above problems still exist and are undermining the capacity of most businesses, including construction companies to grow and be competitive (cf. ISSER, 2008).

2.2.4 Organizational Structure of SMEs

Management organization relates to the organizational structure of the company and this usually has significant impact on construction project performance. This is because effective management of the organization brings about teamwork resulting in effective project delivery to time, within cost and to the required quality standard. Experience of technical personnel within the organization also boosts contractor performance because these personnel are responsible for formulating and taking decision at the right time for project to be completed within cost, time and quality (Aje *et al.*, 2009).

2.2.5 Management structures of construction SMEs

Generally, most SMEs maintain a simple management structure with relatively few management layers (Messeghem, 2003). Decision making is vested in the owner manager who performs most business functions including direct supervision of the performance of activities (Timmons 1999:26). This, according to Ghobadian and Gallear (1997) makes the owner/manager the focal person in the SME. Delegation of responsibilities to key employees may be done by him/her as and when he/she finds it necessary. Departments are rarely established in the smaller size SMEs to help carry out important organisational functions such as accounting, production and personnel.

The lines of communication are shorter, facilitating efficient and faster decision making. Fielden *et al.* (2000) have pointed out that the simple communication structure of SMEs promotes innovation, team spirit and an easier focus on clear goals. The simple organisational structure couple with the direct control of owner/manager results in less bureaucracy within most SMEs.

2.2.6 Strategic Management in SMES

Most literature on strategic management is on businesses without regard to their size. Many authors of the literature have emphasised strategic management in the face of globalisation, changing technology, integrated economies, changing workforce and the need to develop (Chinowsky 2001b; Chinowsky and Meredith, 200; Dansoh, 2005; Edum-Fotwe, 1995; Junnonen, 1998; Smallbone et al., 1997).

The strategic management process in construction companies as found in the strategic management literature (Price and Newson, 2003; Venegas and Alarcon, 1997; Warszawski, 1996) can be summarised as follows:

- Surveying the external and internal environments of the company.
- Developing a strategy by determining and evaluating alternative strategic options and choice of future courses of actions; and
- Selecting the preferred strategy and implementing it.

Venegas and Alarcón (1997) provide a structured path and techniques of analysis. The advantage of a structured procedure is to force a logical thinking through the process of strategic management, which may be well suited to businesses with formal and structured approaches to organisational functions. This is a questionable approach for SMEs whose preference is for an informal management style.

2.2.7 The Informal Management Style of SMEs

Mintzberg (1979:306) noted that, little of the behaviour of small firms is formalised and that they make minimal use of planning. Therefore, the informal style of management by small firms may seem incongruent with the rather formal methods of strategy formulation, analysis, and implementation.

Rather than remain passive to adverse environmental pressures and constraints, owner managers may respond by developing strategies to overcome these constraints. It would be wrong to assume that SMEs, as a result of their preference for informal management style do nothing about strategic management; at least they may perform strategic management in a way that suits their culture. One key paradox elaborated upon by Price and Newson (2003) is related to the question of what strategy an organisation should adopt. The approach may be logical and structured (Ansoff, 1979; Porter, 1998) or creative and intuitive (De Wit and Meyer, 1999; Ohmae, 1982). Mintzberg (1994) makes the distinction between strategic planning as an analytical, formal and concerned with programming and strategic thinking as creative, intuitive and characterised by synthesis and suggests the latter to be the key to successful strategy. Hofer and Schendel (1978), Burstein (1999) and Spillan and Ziemnowicz (2003) seem to carry the voice further by stating that all firms have a strategy.

Chan and Forster (1999) note that strategy in the world of small business may be much less formal in its nature and that owner-managers may have implicit rather than explicit strategies.

Empirical research by Woods and Joyce (2003) demonstrate that, as small firms gain knowledge of strategic tools, their practices will evolve to better management strategies.

2.2.8 Cultural Practices

The cultural practices of most developing countries hinder growth of SMEs. However, the current technological advancement is pushing most of these enterprises to undergo transformation. Woods and Joyce (2003) noted that there are cultural changes in management, necessitated by growth. This change engenders a move from informal management to formal strategic management.

Ownership has an influence on strategic management practices of SMEs. O'Regan and Ghobbadian (2002) study highlights the differences in strategic practices of small subsidiaries and SMEs. Studies indicate that small subsidiaries of larger organisations face fewer barriers to implementation of strategic planning than independently owned SMEs. Their findings also indicate that small subsidiaries place greater emphasis on formal planning than SMEs.

The literature on strategic planning in SMEs indicates a tendency for adoption of informal strategic planning in SMEs compared with larger businesses. While there is no specific literature investigating the inclusion of management practices in SMEs, it is worth noting that planning in small businesses tend to be informal, in line with the way SMEs carry out strategic management.

2.2.9 Staff management by SMEs

The management of contract staff is of great significance to the growth and development of any construction firm and the small and medium scale contractors are of no exemption.

The casualized nature of the workers of these small firms has serious implication on their management.

For the purpose of this study, the words 'contract staff' are used to refer to employees whose services are dependent on the specific job or duty they were hired to carry out.

They are laid off at the end of that particular 'contract' and can only be retained if another job comes on stream. The most notable characteristic of this category of workers is the fact that their employment is not permanent. Existing literature use different words to refer to contract staff: they are in some cases referred to as 'contingent workers', 'dispensable workers', part time workers, casual workers and non-core workers (Hampton, 1988). They are also known as 'labour only' sub-contractors (Buckley and Endewuik, 1989), in Hallenbradth and Cannon (1989), flexible workforce and peripheral workers in Williams (1993).

Explaining further, Williams (1993) said: Core workers are covered by the standard contracts of employment but peripheral workers may be engaged under a whole range of loose arrangements that are tied much more directly to the daily ebb and flow of the production cycle, and the flow include various combinations of casual, part time, seasonal, sub-contractual, state subsidized and fix term arrangements. According to Hampton (1988), this system which is widely in operation in Japan is spreading fast in the United States of America where it is now undergoing fundamental changes. This system is also gaining grounds in Africa, especially in Nigeria. Contract staffs are either engaged directly by the organization that requires their services, or hired and supplied by outfits whose function is to pay and administer their benefits, using money provided by the original contractor (Hampton, 1988) The industry, as Adegboro (1992) noted, has the unique ability to facilitate development of the nation by providing directly for human needs or ~~stimulating investment~~ or by generating employment which can accomplish those objectives. The construction industry is labour intensive and 'contract staff' cut across the range of professionals like mechanics, electricians, plumbers, painters, carpenters, etc. Employment of contract staff or temporary staff is one strategy the construction industry is using. Job seekers are forced to accept any job offered to them

whatever conditions come with it. Thanks to the high rate of unemployment in the country. Apart from the already mentioned management practices the research work is also directed towards improving existing knowledge about the contract staff administration of SMEs in Ghana.

2.3. SMEs Staff Motivation

According to Fryer, (1990) the growth and development of any construction firm would greatly depend on the performance of the workers. This he further stated will depend on the ability, skill, experience, personality, motivation of the contract staff, the work environment, task clarity, and stress factors under which contract staff works.

Nwachuhwu, (1988) also held a similar view that when management systems are examined by the analysis of various functions of personnel management which include human resources planning; recruitment, staffing and appraisal; training and development; compensation (wage and salary administration, fringe benefits and services administration), health and safety, labour relations and personnel research enhances the growth of the organization.

2.3.1 Role of Finance on SMEs Growth

The role of finance has been viewed as a critical element for the development of small and medium-sized enterprises. Previous studies have highlighted the limited access to financial resources available to smaller enterprises compared to larger organisations and the consequences for their growth and development (Levy, 1993). Typically, smaller enterprises face higher transactions costs than larger enterprises in obtaining credit (Saito and Villanueva, 1981). Insufficient funding has been made available to finance working capital (Peel and Wilson, 1996). Poor management and accounting practices have

hampered the ability of smaller enterprises to raise finance. Information asymmetries associated with lending to small scale borrowers have restricted the flow of finance to smaller enterprises. In spite of these claims however, some studies show a large number of small enterprises fail because of non-financial reasons (Liedholm *et al.*, 1994).

Omole (2002) opines that the aim of cost management is to ensure that resources are employed to the best advantages to produce a maximum value for money. Odusami (1998) also evaluated managerial ability of contractors in the pre-qualification and selection of contractor by concluding that any contractor that lacks managerial capabilities is an incompetent contractor.

More recent concerns associated with the growth and efficiency of smaller enterprises has also become prominent (Mazumdar, 1997). While a considerable amount is known about the characteristics and behaviour of small and medium-sized enterprises, this knowledge continues to be imperfect and a large number of questions remain unanswered in relation to finance and small enterprise development.

2.3.2 Plant and Equipment Management

The suitability of the contractors' equipment and plant for proposed project is of vital importance in construction activities. The efficient management of plant and equipment on the side of contractors enhances proper execution of the project and helps in urgent delivery of project. Harris and McCaffer (1995) observe that effective use of plant and equipment contributes significantly to construction time performance. Furthermore, Holt *et al.* (1995) considered contractors' reputation and image as effective measure of company stability, reliability and experience. A firm that manages its plants and equipment properly will definitely experience growth. Therefore, the competence of any

contractor in terms of its managerial ability reflects heavily on the performance on any project that they seek to undertake.

Aje et al, (2009), also held a view that the more experience the contractor has, the more will be his performance in terms of cost, time and quality. Improved contractor performance leads to increased client satisfaction, an improvement in the reputation of contractors and hence their competitiveness in the market. Contractors of high repute and better past performance will bring about improved client confidence and raise the possibility of future business.

2.3.3 Contractor success

The construction industry is vital for the development of any nation and the physical development of construction projects such as buildings, roads, and bridges is the measure of their economic growth. According to Ye et al. (2009), the construction industry is one of the most significant industrial contributors to the European economy in terms of gross product and employment. As a result, the success of a construction project is a fundamental issue to most governments, users and communities.

In modern construction projects there are significant challenges for both clients and contractors to deliver the project successfully due to increasing complexity in design and the involvement of a multitude of stakeholders (Doloi, 2009).

In addition to the above stated complexity of construction projects, defining project success itself is a complex issue (Lam et al., 2008; Toor and Ogunlana, 2010; Wang and Huang, 2006).

Chan and Chan (2004) reported that the concept of contractor growth is developed to set criteria and standards to aid project participants to complete projects with the most

desirable outcomes. However, this concept remains somewhat of an enigma as there is no agreement on what should be the critical success criteria on construction projects despite several studies (Ahadzie et al., 2008).

The iron triangle (on time, under budget, according to specifications) has been the widely accepted criteria for project success during the last couple of decades. However, Toor and Ogunlana (2010) reported that the same old-fashioned performance criteria can no more be the sole determinant of contractor success due to change in demands of users, evolving environmental regulations, and shifting functions of buildings.

2.3.4 Factors Contributing to Contractor Success

There are many factors that contribute to contractor success. Construction projects and their success are highly dependent on contractors (Banki et al., 2009; Palaneeswaran and Kumaraswamy, 2001; Yaweli et al., 2005). One of the issues related to contractor growth is at what point a contractor is considered to be successful or not (Ojiako et al., 2008). An additional issue for consideration is that growth measurement criteria vary from contractor to contractor (Toor and Ogunlana, 2010).

More recent concerns associated with the growth and efficiency of smaller enterprises has also become prominent (Mazumdar, 1997). Using the case of Northern Italy, Piore and Sabel (1984) have argued that small enterprises are more efficient because they have adopted a flexible specialisation approach. Correspondingly, there has been growing interest in whether this model has or can be replicated in developing countries (Schmitz, 1989; Pederson, 1994; Schmitz and Musyck, 1994; Schmitz, 1995).

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2.3.5 Summary

The chapter brings to light literature on the nature of SMEs and how some of their management practices impact negatively on growth. That notwithstanding, their importance cannot be understated. Lack of uniformity of the definition of SMEs presents problems which a researcher must carefully consider. The characteristics of SMEs and the position of the owner/manager as a key person have implications for research first, in terms of access for data collection and second, methods of data collection. The characteristics of SMEs in relation to their environments and management practices have implications on their growth and development particularly in developing countries.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter discusses how the work was carried out in order to meet the study's aims and objectives. The approach undertaken for this research comprised two components, a literature review on SMEs as discussed in the previous section, and self-administered survey. The section presents discussions of literature on paradigms that inform the study's underlying philosophical assumptions and the different research strategies available which was used as means of solving specific research problems. Discussions on the relative merits of the different research strategies would also be presented in light of the particular characteristics of SMEs. The section also will argue for the adoption of methods well suited to construction SMEs which also took into account the nature of the phenomenon under investigation, therefore a qualitative strategy was adopted.

3.2 Study Area

The study area selected for the research work is the northern region of Ghana. The Northern Region, which occupies an area of about 70,383 square kilometres, is the largest region in Ghana in terms of land area. It shares boundaries with the Upper East and the Upper West Regions to the north, the Brong Ahafo and the Volta Regions to the south, and two neighbouring countries, the Republic of Togo to the east, and La Cote d' Ivoire to the west. The region's capital is Tamale. The land is mostly low lying except in the north-eastern corner with the Gambaga escarpment and along the western corridor. The region is drained by the Black and white Volta and their tributaries, Rivers Nasia, Daka, etc.

3.3 Research Design

Survey research design was adopted in this study to assess the effect of management practices on the growth of small and medium scale road contractors in Ghana using northern region as a case study.

It is possible to use more than one research strategy in any particular study, but when the research focuses on how and why questions about a contemporary set of elements, the use of case study research is more desirable (Yin, 1994). The research approach adopted in the study was the use of a case study research. Gilham (2000), broadly defined case study as the “one which investigate an individual, a group, an institution or a community to answer research question(s) and which seek a different kind of evidence, evidence which is there in the case setting, and collated to get the best possible answers to the research questions.

The study consisted of collection of both qualitative and quantitative data using semi-structured interviews survey. This was done using various data collection techniques as well as analytical methods.

A pre-test was conducted with SME owners/managers who were selected at random from the database of departments of Feeder Roads, Urban Roads, Ghana Highway Authority and the Contractors Association in Northern Region of Ghana for small and medium scale contractors for the interview. The chosen firms were such that they were not diversified or linked to any multinational cooperation, and may be mainly family-run ventures operating in the road sector with a maximum of 50 employees (Kheni, 2008). The owners or managers and consultants were given a face-to-face interview.

3.4 Sources of Data

The researcher employed the use of primary sources of data. The primary data were collected through the use of interview guide where the researcher personally interviewed classes A3B3 and A4B4 road contractors as well as consultants in the government road sector departments.

3.5 Target Population

Ghana has ten administrative regions subdivided into 216 distinctive metropolitan, municipal and district assemblies. Construction businesses are registered members of contractors associations; the Association of Road Contractors of Ghana (ASROC) or the Association of Building and Civil Engineering Contractors of Ghana (ABCECG). The Headquarters of the two associations are in the national capital-Accra and regional branches have been established in the ten regional capitals of the country. The target population was ninety-eight (98) which represented the entire small and medium road contractors in northern region of Ghana.

3.5.1 Data Collection instrument

In view of the nature of the topic, a face-to-face interview was the main and the most appropriate instrument used. Questionnaires are an inexpensive way to gather data from a potentially large number of respondents however, the nature of this study called for personal interview. The pre-test initial interview was pre-target at respondents of ten (10) small and medium scale road contractors in Northern Region of Ghana. The contractors were selected from registered listings of Ministry of Roads and Highways (MRH) and Association of Road Contractors (ASROCN) operating in the northern region. To achieve the overall target, non- probability sampling techniques was adopted for this survey. This

non-probability sampling techniques was used because it have the added advantage of getting the key respondents (through introduction) possess the required characteristics and information for this survey. Purposive sampling technique was used to select the consultants for the research. Data was collected through interviews only and responses served as the main source of data.

3.5.2 Sample

As used by various researchers, the term 'sample' refers to specimen or part of a whole (population) which is drawn to show what the rest is like (Naoum (1998). Sampling involves choosing part of a population of interest for a survey. It is aimed at providing practical means of enabling the data collection and processing component of research to be carried out whilst ensuring that the sample constitutes adequate representation of the population (Fellow and Liu, 2003). It is argued that, it is virtually impossible to test every member of a population. This means that, it is impracticable to reach every member of a population when collecting data.

3.5.2.1 Sample size determination for contractors

In order to obtain a sample that is representative of the population, the Kish Formula was used to determine the sample size. Statistics obtained from the Association of Civil Engineering and Road Contractors in the northern region, there were in total, ninety-eight (98) road contractors. Forty-three of these contractors were in good standing. To determine the sample size, the Kish Formula was used.

Kish Formula states that:

$$n = \frac{n'}{\left(1 + \frac{n'}{N}\right)}$$

$$n' = \frac{s^2}{v^2}$$

Where

v = the standard error of sampling distribution = 0.05

s^2 = the maximum standard deviation of the population

Total error = 0.10 at a confidence interval of 95%

$$s^2 = p(1 - p) \text{ where } p = 0.50$$

$$= 0.50(1 - 0.50)$$

$$= 0.25$$

p = the proportion of the population elements that belong to the defined region.

$$n' = \frac{s^2}{v^2}$$

$$= \frac{0.25}{0.05^2} = 100$$

$$N = 43$$

Therefore

$$n = \frac{100}{\left(1 + \frac{100}{43}\right)} = \frac{100}{(1 + 2.33)} = 30.07 \approx 30$$

The sample size was found to be thirty (30) for the contractors. Six (6) consultants were also chosen from the three government consulting firms in the region. These six (6) consultants were chosen using convenience sampling. The reason being that there are only three (3) government road consulting firms namely, the Ghana Highway Authority, the Feeder and Urban Roads departments. The six (6) who were selected by the use of convenience sampling were made up of two (2) persons each from the three departments since they were the only three existing in the region.

However, the central limit theorem indicate that a sample size of thirty (30) should be the minimum for every research. Taking into account of this research, the total number of SMEs road contractors in the northern region who are in good standing as at 18th October 2012 (www.mrt.gov.gh), were forty-five (45) for classes A3B3 and fifty-three (53) for classes A4B4. The Association of Road Contractors (ASROCN) in the region also gave me a list of these contractors and when compared the list of those in good standing some names were not found meaning they were not in good standing. Based on this, the researcher assumed to interview all these contractors due to the fact that their number was relatively small and does not require any mathematical interpolation; however this was not possible due to in-depth nature of the interview guide.

3.5.3 Sampling

There are 'no hard and fast rules about numbers however, qualitative research in old age and aging has used experiential cell sample sizes of 10 to 100, with clustering around 50 (Rubinstein, 1994). Arguably, other researches in this area have also suggested that 12-20 data sources is used when looking for disconfirming evidence or trying to achieve

maximum variation (Baum,2002). Whilst there are no closely defined rules for sample size (Baum 2002, Patton 1990), sampling in qualitative research usually relies on small numbers with the aim of studying in depth and detail (Miles & Huberman 1994; Patton 1990). Again in seeking a richness of data about a particular phenomenon, the sample is derived purposefully rather than randomly (Mays & Pope 1995; Ezzy 2002, Leedy & Ormrod, 2005, Miles & Huberman, 1994). With the qualitative research paradigm, there are many variations in sampling procedures, goals, and strategies. Several authors have suggested that purposive sampling (also referred to as 'judgment sampling') and 'theoretical sampling' is the main categories defining qualitative sampling approaches (Marshall, 1996). Purposive sampling refers to strategies in which the researcher exercises his or her judgment about who will provide the best perspective on the phenomenon of interest, and then intentionally invites those specific perspectives into the study. However, in practice, the complexity of the competing factors of resources and accuracy means that the decision on sample size tends to be based on experience and good judgement rather than relying on a strict mathematical formula in a case of qualitative research (Brink 1991; Lincoln & Guba 1985). For the sake of clarity the research employed purposive sampling as technique best for the study.

3.5.4 Sampling Technique

A purposive non random sampling technique was used based on annual turnovers of the contractors to draw the sample from the population. A survey is an investigation about the characteristics of a given population by means of collecting data from a sample of that population and estimating their characteristics through the systematic use of statistical methodology (Kheni, 2008). The survey is a non-experimental, descriptive research method. It tends to be qualitative and aims to collect information from a sample of

population such that the results are representative of the population within a certain degree of error.

In the study, a total sample size of thirty-six (36) was taken. This was made up of fifteen (15) classes A3B3 contractors, fifteen (15) A4B4 contractors and six (6) consultants made up of two (2) each from Ghana Highway Authority, Urban and Feeder Roads Departments based in the northern region.

3.5.5 Reasons for Consultants

The two (2) consultants chosen from each department were made up of one (1) Maintenance Engineer and a Quantity Surveyor. The reasons for choosing this category of consultants are that, the Quantity Surveyors interacts with the contractors' right from pre- tender through post tender stages to the end of the project. The Maintenance Engineers at the various departments also come into contact with the contractors on daily basis both at office and site. This means that they are familiar with these contractors and can therefore give proper and reliable account of them.

3.5.6 Data analysis

Data collection and data analysis are concomitant activities (Marshall and Rossman, 1999; Yin, 2003) citing Abasi, (2012). Analysis of data is a process of editing, cleaning, transforming, and modelling data with the goal of highlighting useful information, suggestion, conclusions, and supporting decision making. (Adèr, 2008). The raw data obtained from a study is ~~useless~~ unless it is transformed into information for the purpose of decision making (Emery and Couper, 2003). Data collected from the questionnaire were analysed, summarised, and interpreted accordingly with the aid of descriptive statistical techniques.

3.5.7 Purposive Sampling

According to Mugenda and Mugenda (1999), purposive sampling is sampling technique that allows the researcher to use samples that have the required information with respect to his/her research objective. Therefore, respondents were handpicked based on their turnovers and also because they possess the required characteristics and were informative. In this regard a total of 30 contractors and 6 consultants from the road sector were selected to seek their response to the interview.

. There are two groups from which the data was collected. The groups are:

- i. Contractors
- ii. Consultants

The contractors were from the two categories involved in road construction operating in the northern region of Ghana and the consultants are

- i. Ghana Highway Authority
- ii. Urban Roads
- iii. Department of Feeder Roads

These departments act as consultants to the contractor groups. The Contractors are further divided into sub groups based on their class category as described by the Government classification scheme, and for this study the classes considered was A3B3 and A4B4

3.5.8 Contractors

In all 30 contractors were interviewed, with 15 coming from each of the classes stated. They were asked several questions that will help identify the type of management practices they had in place. These practices covered areas as presence of organizational

structure, management project, operational management, financial management, plant/equipment management, strategic management

3.5.9 Validity and Reliability

To ensure the validation of the results gathered through the interview guide, the interview questions were pre-tested on the contractors to gather their views on the same issue. Having compared the results obtained from the study with what was pre-tested, it was realised that the information or data gathered from both ends were consistent and responses almost similar. The consistency of the data collected made the study at the end of the analysis answered what was intended to be achieved, hence making the data reliable.

3.6 Summary

This chapter has discussed the research strategy and the research design adopted for the study. Relative strengths and weaknesses of commonly adopted research methods have been discussed. The chapter has argued for a qualitative approach which the study adopted based on the context of the study and information required to shed light on the phenomenon under consideration. The research design discussed in the chapter describes the links between three elements of the methodology adopted for the study; the underlying philosophical assumptions of the research, the research methods and the methods of data collection employed by the study. Analytical techniques adopted in the study have also been explained. The processes followed from the conception of the research idea up to the writing up of the thesis have been described. The next two chapters that follow present the results of the study.

CHAPTER FOUR

DATA ANALYSIS, RESULTS AND DISCUSSIONS

4.1 Introduction

This section of the thesis is exclusively for the analysis of the data collected from small and medium scale road contractors in Northern Region of Ghana. The results from the analysed data are then discussed. In all thirty-six (36) people were given face-to-face interview on the field comprising fifteen (15) A3B3 classified contractors, fifteen (15) A4B4 classified contractors and six (6) consultants from the government sector. The response rate for the data collection was 100%. Those interviewed in the construction firms included managing directors (owners) of the firm. The responses from the interview were analysed qualitatively. The chapter took into consideration background information of the respondents organization and the research objectives and questions of the study outlined in chapter one.

4.2 Demographic Profile of Road Contractors

This subsection is useful for understanding the context of the small and medium scale road contractors in Northern Region. An analysis of these variables provides an insight, keen on the kind of small and medium scale contractors existing in Northern Region. The description is presented in terms of the following variables: registration of the company, mode of ownership, location of the contractors, length of existence, management and ownership, and contractor classification. It is fundamental to understand the background of the respondents and therefore, the interview interrogated all that through the study. This helped to construct a relation connecting the qualities of their responses such that appropriate deductions are made in the resulting data analysis.

4.2.1 Registration with Associated Authorities

Pursuant to laws and regulations guiding small and medium scale road contractors in Ghana, any person, firm or legal body wanting to engage in any road construction business must have a certificate of business registration from Registrars General Department and license from Ministry of Roads and Highways. They could only work prior to permit issuance and commencement of work certificate. Obviously, all 100% of the active response rate showed that they are registered with the relevant legal authorities and in good standing. This is a pre-requisite for a certificate to operate such business.

4.2.2 Mode of Ownership

When organizing a new business, one of the main significant resolutions to be made is to decide on the structure of the business, ranging from sole proprietorship to limited liability. This decision basically will have long term rippling effect on the business.

Table 4.1 and Figure 4.1 show the responses of the contractors regarding mode of ownership.

Table 4.1: Mode of Ownership

Mode of Ownership	No. of respondents	Percentage
Limited Liability	18	60.00%
Sole Proprietorship	10	33.33%
Partnership	2	6.67%
Total	30	100.00%

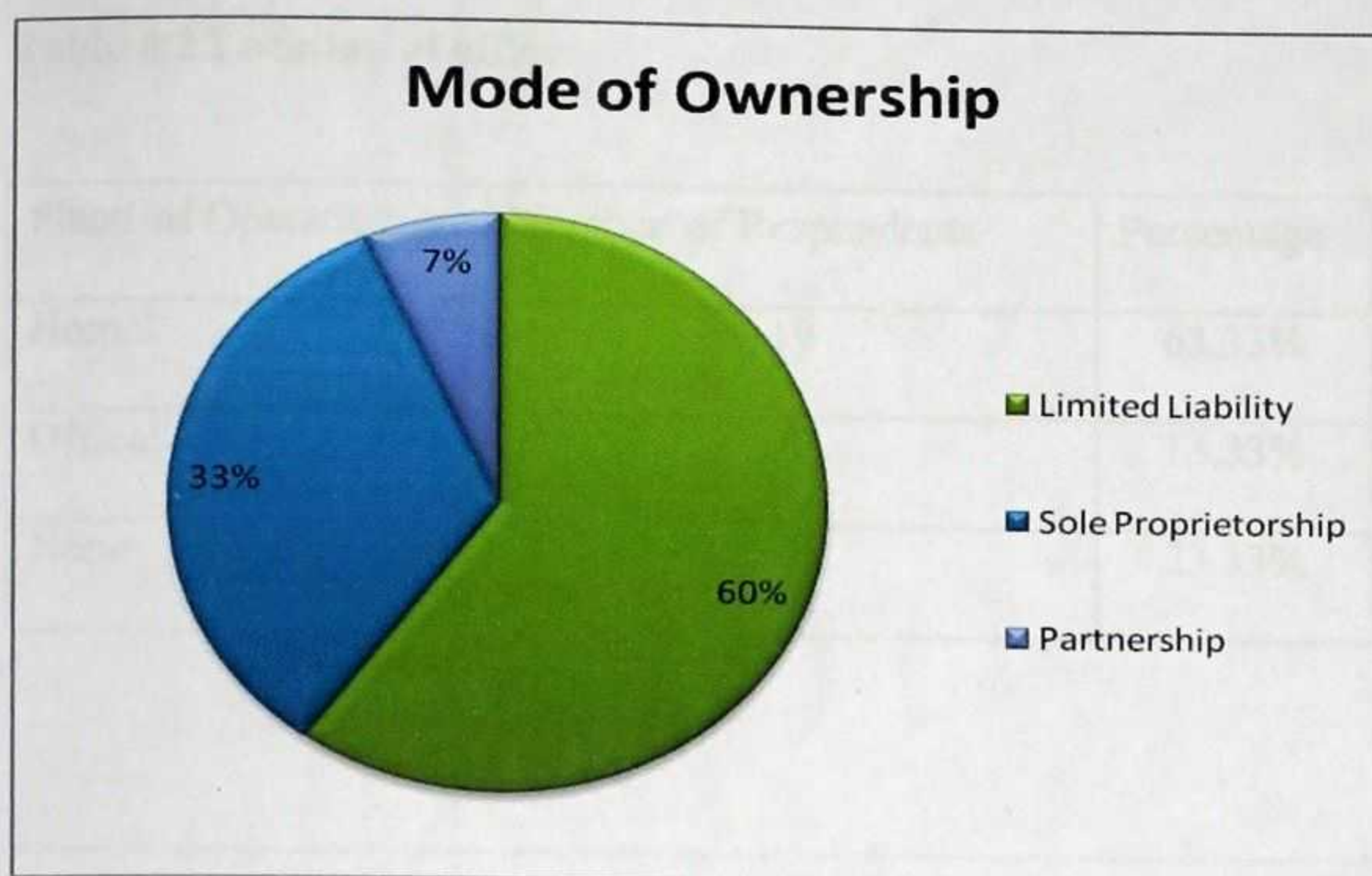


Figure 4.1 Mode of Ownership

From the above, it is crystal clear that most of the small and medium scale road contractors in Northern Region are largely organized as limited liability companies. Closely followed is that of sole proprietorship and partnership being the least. Perceptibly, one could say that the small and medium road contractors in Northern Region are organized as limited liability companies whilst a few are sole proprietorship and partnership.

4.2.3 Location of Office

Most of the responses from the cases affirm that they have an office location, whilst an insignificant number of them do not have an office location. However, they operate from their homes. All of them indicated they have valid address that they could be contacted. Ideally, the company act stipulates all business organizations to have an office location instead of operating from houses.

Table 4.2 Location of office

Place of Operation	Number of Respondents	Percentage
Home	19	63.33%
Office	4	13.33%
None	7	23.33%



Figure 4.2 : Place of Operation

4.2.4 Length of Existence

Most respondents reported that they have been involved with the road construction industry for more than ten (10) years. It could averagely be said that an impressive number of them have experience equivalent to twelve (12) years, forming approximately 57%. This shows that the data collected came from contractors with vast experience which gives credence to the study.

Table 4.3: Years of existence of firms:

Years in Operation	Number of Respondents	Percentage
1-3	1	3.33%
4-6	5	16.67%
7-9	5	16.67%
10-12	17	56.67%
Above 12	2	6.67%

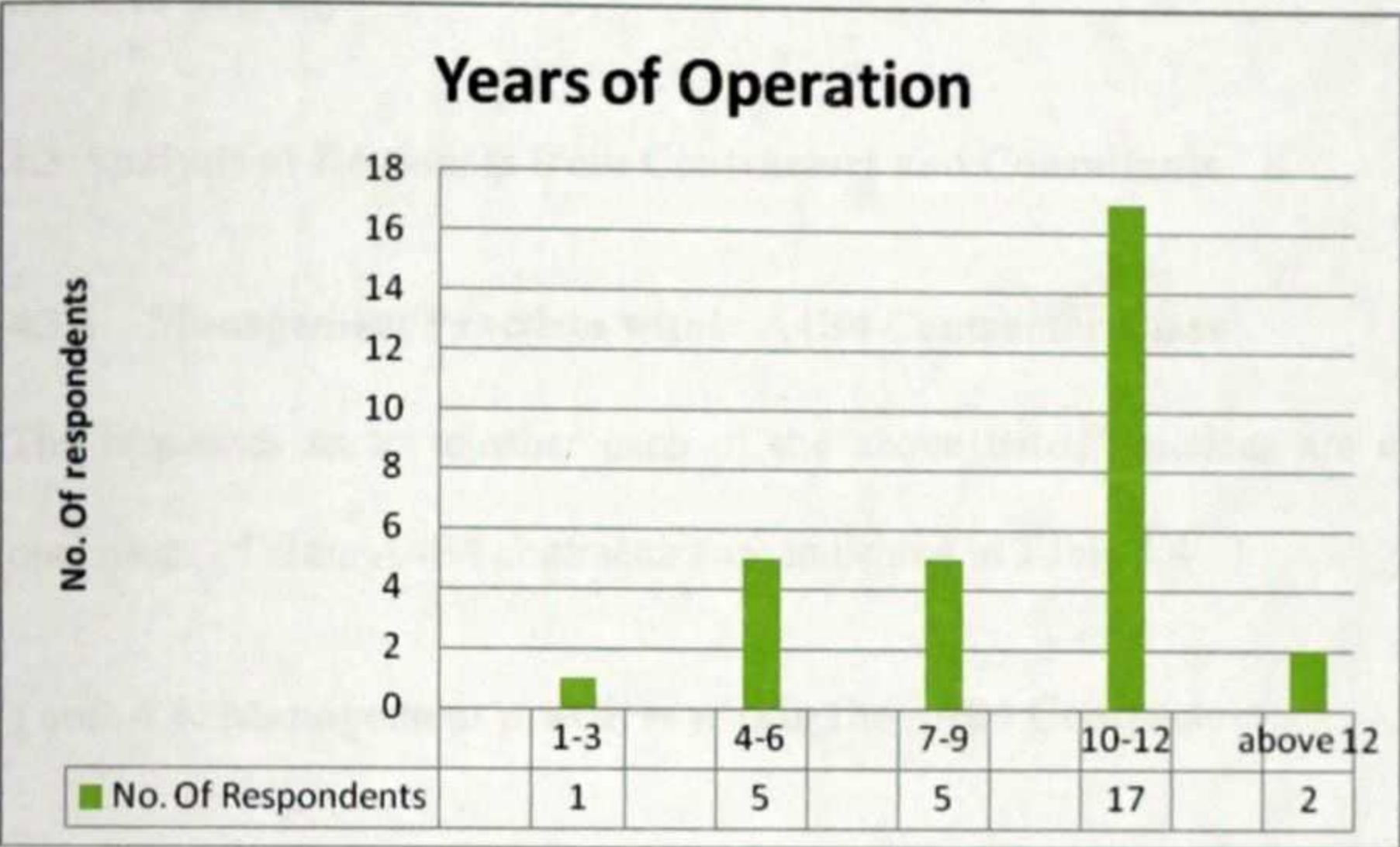


Figure 4.3: Years of Operation

4.2.5 Management and Ownership

The relationship connecting ownership and management among small and medium scale contractors in Northern Region and their separation is an outstanding problem for their growth and development. In corporate governance, it is prudent that owners are sometimes different from those running the company so as to allow skilled managers to conduct the complex operation of the business. Close to 80% of respondents indicated that they are owners and managers as well. They asserted that they do not find it

necessary to engage the services of managers. Repeatedly, they were questioned as to the reason, most of them cited the huge remuneration of hiring the services of a manager. It is obvious from the results that owner-manager seem to be a trend among small and medium contractors in Northern Region. It could therefore be argued that financial performance is a function of separation of ownership and management, and which eventually leads to growth of small and medium enterprises. It is also worthy to say that separating ownership from management makes firms more profitable and their survival rate is as well high.

4.3 Analysis of Responses from Contractors and Consultants

4.3.1 Management Practices within A4B4 Contractor Class

The responses as to whether each of the above listed practices are employed in the operations of class A4B4 contractors are indicated in Table 4.4

Table 4.4: Management practices within the A4B4 Contractors

MANAGEMENT PRACTICE	Practiced	
	frequency	Percentage
Organisational Structure	3	20%
Management of Projects	7	47%
Operational Management	6	40%
Financial Management	5	33%
Plant and Equipment Mgmt.	4	27%
Human Resource Mgmt.	5	33%
Strategic Management	4	27%

4.3.2 Organizational Structure

From Table 4.4 it is seen that, 20% of the respondents from this category indicated they have an organizational structure and majority (80%) said they have none in place. Of the 20% that responded positively to that question, only one respondent was able to provide documentary proof of the organization structure depicting the line of authority and communication within the firm. This is clear indication of absence of laid down command structure or lack of comprehensive management structure. As a result, company's growth can be affected.

4.3.3 Management of Projects

On the issue of the management of projects 47% of the respondents stated they apply management principle in their operations. But again further probing showed that no records are kept on the progress of projects. In terms of monitoring projects some responded that they pay unannounced visits to project site. Others indicated visits are paid at schedule times and none of the respondents gave information regarding the parameters used to access what percentage of the works have been done and how much was left. Again a majority indicated this managerial practice was not employed in the execution of projects with as many as 53% responding in the negative. It is clear that they do not use project management practices in the management of their projects and this can affect the growth of the firms negatively.

4.3.4 Operational management

As to whether they employed the use of operational management techniques in their contracts with focus on fuel acquisition, mobilising plants and equipment, setting up temporary stores and offices on site, 6 respondents representing 40% indicated they employ the practice and the answers to the follow-up question showed that a majority of

that number employed a greater degree of operational management style in project execution. 60% responded in the negative. Majority who practice the operational management technique do because setting up site offices is usually priced in Bill of Quantities by the contractors and so the only way they can get paid for these items is compliance to the conditions of the contract. Therefore they are able to apply this management concept relatively well and this guarantee performance that results in growth.

4.3.5 Financial management

33% of respondents indicated they applied this management technique. Follow-up question indicated that all of them did not in reality employ the technique. All respondents did not have qualified personnel to handle the purse of the company including those of project under execution. 67% respondents indicated they had employed family members but these members were found to be without the requisite qualifications as accountant. Though the researcher could not access their financial statements from the bank it was evident they have no proper records of financial management practices as most could not even produce records of past projects' financial itinerary. The absence of a qualified person to handle the accounts of firms shows that the firms lacks financial management policy which could have a serious repercussion that can affect the growth of the firms.

4.3.6 Plant and equipment management

With regards to plant and equipment management, 4 respondents representing 27% responded positively with a higher number 73% admitting not having any proper laid down procedure for managing plant and equipment. Of those that gave affirmation, only 2 representing a 13% could provide documents to show laid down procedures for plant and

equipment maintenance and records of past maintenance. The Ghanaian habit of poor maintenance culture results in frequent break downs thereby rendering these plant and equipment less efficient, and causing delays in executing projects. When these equipment break down, large amount of monies are needed for repairs, delay in finishing work may attract penalty thereby reducing the profit margin. Taking into account all these challenges, it is clear that without plant and equipment maintenance policy, firms cannot grow.

4.3.7 Human resource management

Human Resource management application in the operations among this class of contractors was also very low with only 5 representing 33% indicated they implement human resource management policy. Four (4) out of the 5 further indicated they had no criteria for recruiting staff. The remaining 67% did not have any human resource management policy. They however, indicated that they employ people with experience and good track records to work for them. With a greater number of contractors without human resource policy, the tendency of low morale within workers has dire consequences. The absence of human resource policy affects the growth of these firms negatively.

4.3.8 Strategic management

27% of the respondents indicated they applied strategic management skills in their operations even though they could not remember or provide any example of a project where they applied strategic management to enhance their performance and reduce the project cost. All equated strategic management to simple management when asked to explain how they understand the principle. 73% did not have any strategic management plan. To survive and prosper in today's business world, organizations must build and

sustain a competitive advantage. Organizations need to get grasp of strategic management concepts and techniques for achieving a strategic advantage. Since a higher percentage do not have strategic management plan, their ability to compete is low and therefore growth is affected.

4.4. A3B3 class of contractors

This class of contractors was also interviewed with the same set of structured questions in relation to the various management practices and how they were employed in their operations. Responses are tabulated below.

Table 4.5: Responses to management practices within A3B3 contractors

MANAGEMENT PRACTICE	Practiced	
	frequency	Percentage
Organisational Structure	6	40%
Management of Projects	9	60%
Operational Management	8	53%
Financial Management	7	47%
Plant and Equipment Mgmt.	6	40%
Human Resource Mgmt.	8	53%
Strategic Management	7	47%

4.4.1 Organizational Structure

Among this class of contractors the response indicated that six (6) out of fifteen (15) representing 40% indicated they had an organizational structure that is documented in place and showing channels of communication and lines of authority. 60% said they had no such documented structure in place although they insisted they had such structures in

place. Compared to A4B4 where only 20% had organisational structure, it shows that as the contractors' class moves up, they improve upon their lines of authority and communication. This shows clearly from the comparism that organisational structure affects growth of contractors.

4.4.2 Management of projects

Nine (9) interviewee representing 60.00% affirmed that the adopted project management practices in their projects execution. Most indicated they employed expertise as and when needed for a particular job, enlisting the help of personnel from the consultants outfit. 40% did not have clear management procedures in the way they run their projects. On A4B4 management of projects, 47% indicated they use project management techniques in executing projects which is about 13% lower than that of the A3B3 contractors. With this difference, it is clear that the contractors improved their project management skills as they attain higher classes. It also means that good management of projects can lead to growth.

4.4.3 Operational management

53% of those interviewed agreed that they employed operational management techniques in their contract executions. 47% however responded in the negative to the direct question about the application of management in project operations but in the followed up question the respondents sought to imply that they apply the management style in project execution. Comparatively, 40% of A4B4 contractors apply operational management. The implication is that, ~~contractor's~~ operational management techniques improve as they move to the next higher class. The absence of operational management techniques in construction firms impedes growth.

4.4.4 Financial management

On financial management, 47% of respondents gave positive response to the use of management skills in financial oversight. This was also supported by the fact they had in their employment qualified accounts personnel with a minimum of higher national diploma or qualification from the professional accounting bodies. The majority 53% do not have accountants to manage their finances. They depend solely on management accountants to prepare yearly audited accounts only when they want to discharge their tax obligations. Access to financial records was difficult since the respondents refused to answer the researcher's questions on financial figures. When you compare the financial management capability of A4B4 contractors to A3B3 contractors, that is 33% to 47% respectively, there is a general improvement as the class of the firm improves. The indication is that financial management capability of the contractors increases as they grow.

4.4.5 Plant and equipment management

In reference to the management of plant and equipment, 40% said they had laid down procedures for the maintenance or repairs of their plant and equipment. Documents adduce supported the claim with some indicating when to carry maintenance checks and procedures for reporting faults. Some of the respondents, 2 representing 13% indicated they sometimes hired out their plant and equipment but that they have a procedure that ensures the safety of their plant/equipment. However 60% did not own plants and therefore did not have any policy on plant and equipment; they depend solely on hiring. Compared to the 27% of A4B4, 40% of A3B3 contractors also have plant and equipment management policy. This indicates that there is a general improvement in plant and equipment management as contractors move up the classification system.

4.4.6 Human Resource management

53% indicated that they employed staff based on their qualification. The remaining 47% indicated they had not always employed staff based on expertise and qualification. Those who do not recruit based on qualification, still employ people base on work experience. In comparison, A4B4 contractors who had human resource policy constituted 33%, while A3B3 contractors constituted 53% with regards to their human resource management policy. All of them indicated a greater degree of satisfaction with the output of their staff. This implies that, as the contractors move up the classification system, their policies on human resources also improves and therefore, growth is affected positively.

4.4.7 Strategic management

A little below half, 47% stated that they apply strategic management style in their contract execution. All respondents including those who answered "No" to the employment of strategic management skills, agreed that they have employed some form of "smart thinking out of the box" to save time and cost in one or more past projects executed. The implication is that a firm with a good strategic plan will experience growth. 27% of A4B4 contractors indicated they had strategic management plan compared with 47% of A3B3 contractors. This is an indication that contractors improve on strategic management as they grow in size.

4.5 Analysis of Responses from Consultants on Road Projects

The consultants were also interviewed with a view to finding out from them their perspective on how they evaluated the performance and growth of the SMEs in the road sector. On part of growth indicators, the consultants were made to give their views on growth variables. They were also asked to rate the contractors and list possible reasons

for their growth or otherwise and their recommendations. The results of the interviews which were recorded and transcribed were translated into Table 4.7.

On the issue of what role they play in the contractors’ work, their responses generally centered on these main areas

- ✓ Award of contract
- ✓ Supervision and enforcement of standards
- ✓ Recommendation of payment and
- ✓ Advisory services to the contractors.

The following were confirmed by the consultants as indicators of contractor growth and results tabled as below:

Table 4.6 Consultants View on Growth Indicators

Indicators of Growth	Dept. Of Feeder Roads		Dept. of Urban Roads		Ghana Highway Authority	
	Maintenance Engineer	Quantity Surveyor	Maintenance Engineer	Quantity Surveyor	Maintenance Engineer	Quantity Surveyor
Staff Strenght	yes	yes	yes	yes	yes	yes
Company Assets	yes	yes	yes	yes	yes	yes
Ongoing Projects	yes	yes	yes	yes	yes	yes
Company Turnover	yes	yes	yes	yes	yes	yes
Clients' confidence	yes	yes	yes	yes	yes	yes

From Table 4.6, the 6 consultants who were interviewed all agreed representing 100% that the stated variables are indicators of growth.

These indicators were initially obtained from literature. The consultants were also asked to rate the entire sample of (30) contractors used for the study, using the terms “very

good”, “good”, “average” and “below average” the responses received are recorded in table 4.7 below:

Table 4.7 Consultants’ Rating of Overall Performance in Percentages of SMSC in the Road Sector

	Very good (%)	Good (%)	Average (%)	Below average (%)	Total (%)
GHA	2	25	45	28	100
DUR	2	10	45	43	100
DFR	15	55	10	10	100

GHA = Ghana Highway Authority

DUR = Department of Urban Roads

DFR = Department of Feeder Roads

The figures on the table show that the Ghana Highway Authority and the Department of Urban Roads had low confidence rating for the work of the small and medium scale road contractors (SMSRC) within the region. On the other hand the Department of Feeder Roads gave them higher ratings for “Very Good” and “Good”. Incidentally, the categories of contractors that work with that department are mainly the A4B4 class of contractors. Since the main role of the Department of Feeder Roads is to provide roads that link rural communities to market centres and urban areas, the type of roads they construct are not first class roads. Hence there will not be the need for intensive capital mobilization as well as the need for highly qualified personnel. Thus, the department gave them the highest rating since they largely meet the requirements for handling their projects.

4.5.1 Financial Management

The consultants were unanimous in the statement that the contractors make it difficult to have information about their finances. However, the consultants were of the opinion that, in the absence of mobilization, most of them are able to mobilize resources to kick start the contracts they win. Between 40 – 60% of them will borrow from private sources to execute their projects whereas the remaining will wait for the certificates (mobilization) to be paid before they commence work. With reference to managing their finances, all the consultants were again unanimous that all of them lacked financial discipline as a result of not employing competent people to manage that area of operations. On the flip side, the contractors had indicated that delay in payment of finished projects was one of the causes for their lack of growth. They indicated they mostly go in for loans with high interest rates and by the time they are paid the interest had eroded any benefits they would have received. While the consultants agreed with them on that point, they nonetheless pointed out that for times the contractors get paid on time, they resort to living affluent lifestyles and acquiring properties that do not promote the survivability of their firms. The assertion was that majority of the contractors refuse to re-invest in their firms and that has affected their ability to expand and grow.

4.5.2 Human Resource management

In response to the competence in terms of requisite and qualified human resource, the consultants were of the view that the contractors were not resourced enough to employ competent and skillful personnel to run their firms. One consultant actually intimated that looking at the list of the 30 contractors considered, he could confidently say only about 5% had enough qualified personnel. About 66% rely on hired professionals to execute projects with the remaining 4% relying on family members to execute their projects. In fact it has been established from the interview with the consultants that most contractors

hire professionals from the consultants' outfit. The consultants opined that with their inability to win contracts for periods of over 6 months, it was difficult for the contractors to retain skilled labour. This also contributes to their inability to win future contracts because of the absence of these skilled personnel. However, they were also quick to point out that some also do not get the contracts because of their poor performance on previous contracts. Their inability to recruit and retain qualified personnel has affected their chances to win more jobs and that has affect growth in this firms.

4.5.3 Operations management

The consultants were of the view that the contractors did not employ any management skills in their operations. That even for those who employ some level of qualified staff the use of managerial skills were absent from their operations. Contractors will not engage in any management practice, if it will increase the cost of operation and therefore turn to use unorthodox means of getting things done. Also, since majority of staff are mostly relatives without skills and expertise to explain the overall advantages of employing established managerial techniques, they only carry out instructions. The consultants indicated that not employing new technologies and innovative management techniques in their operations results often in high overhead costs.

4.5.4 Management of Projects

Responses from all consultants indicated that, this is about the only area where some management is applied. Probing for the reason why this is so, respondents intimated that failure to abide by the project requirement will mean not getting paid. So the contractors will ensure that they meet all standards set for the project. This means that the firmness and insistence of the supervising consultants had some effect on the way the contractors managed their projects. From the responses of both classes of contractors, 60% of the

A3B3 and 53.33% of A4B4 showed a certain level of control over the way projects are managed. This is a confirmation of the statement from the consultants, that they make sure that the contractors meet the projects standards before they recommend payment.

4.5.5 Consultants Response on Indicators of Growth

All the consultants agreed that the small and medium road firms did not show signs of growth. They further added that if even there was growth amongst the group of contractors in the study, there was nothing visible to show for it. The consultants bemoaned the attitude of the contractors in not using management practices that will enhance their operational management and subsequently result in their sustenance and growth. Enquiring about parameters for measuring growth, consultants were of the view that one was the increase in plant and equipment; modernizing the modes of construction, increase in the number of employees (both skilled and unskilled). The other way to measure growth was by means of annual turnovers of the companies. This method of assessing growth according to the consultants was not easy as, contractors were not forthcoming with their financial status either because of fear of taxation or superstitious beliefs. Besides most of these contractors do not have qualified accountants to manage their finances and so yearly turn over are usually under or over declared. This makes it difficult for one to categorically state whether they are growing or not. Clients' confidence in a firm guarantees more jobs for firms as agreed by all the consultants and 75% of the contractors. The confidence client repose in a firm can lead to getting more jobs and this can lead to growth.

4.6 Comparism of Contractors and Consultants Responses

This section discusses the responses from the consultants juxtaposing it with the responses from the contractors and see how they relate to the objectives of the research.

The rating from the consultants shows that the Department of Feeder Roads gave the highest rating for the contractors.

On the other hand, the Ghana Highway Authority, GHA, and the Department of Urban Roads deal with roads that are of the first and second class orders and these can only be constructed with the right knowledge and expertise backed by the proper plant and equipment, hence the poor ratings given to the contractors. Relating this fact to the responses of the contractors in that category, it was seen that apart from the use of the project management skills all other management practices like employing qualified personnel, doing proper plant and equipment management and others were very low in their practices. It could therefore be concluded that non usage of these management practices resulted in their inability to operate efficiently.

4.6.1 Degree of Accuracy in Responses

Taking a close look at the various management practices used in this research it was seen that majority of the contractors had not been accurate with their responses or had misinformed the researcher. In the area of human resource management, it was realized that, the opinion of the consultants, agreed with the contractors that, they do not have qualified personnel to carry out their work but instead depend on hired personnel. "Hire" in this sense meaning employed just for a particular project and services dispensed off after the completion of the project. For the consultant, the inability of the SMEs to retain a skilled labour force was evidence of lack of growth. By definition from the National Board for Small Scale Industries (NBSSI), a small company is one with less than 10 employees. Therefore the inability to maintain such a small staff when the company is required to construct roads leaves a bad image of growth for such a company. But it could

also be that the absence of modern and strategic managerial practices serves as catalyst for the contractors to have a high turnover of skilled personnel.

4.6.2 The Use of family members in Management

The use of family members as managers but without the qualifications needed for the management levels also comes to play in the lack of growth of these companies. The companies tend to be operated as one man business confirming what other studies have reported (Ahadzie, 2007). The lack of skills on the part of the managers also makes it difficult for them to move along with the ever changing landscape of technology and the changing demands of a developing country like Ghana as confirmed by Edmonds and Miles (1984) and the Ghana Skills and Technology Development Project (GSTDP), (2010).

4.6.3 Divergent Views on Plant Management

In considering management of plant and equipment, again there was contradiction between the responses of the two groups. Whereas all the consultants agreed on the fact that most of the contractors hired plant and equipment to execute projects which meant they had no requirement for maintenance, 40% contractors of the A3B3 class and 26.67% for the A4B4 class, responded that they had policies governing the services and maintenance of their equipment. Most of them though failed to produce documentary proofs; it can be deduced from the comments of the consultants that the contractors really rely on hiring equipment. To remain relevant and competitive, these contractors must adopt maintenance culture and measures that will enable them acquire plants and equipment. This will ensure their survival in an increasing difficult business environment. Further, they lack skills and modern knowledge about changing technology. The reluctance to adopt them, as per the responses from the consultant stating that “when paid

contractors refuse to invest their dividends in plant and equipment, but rather acquire vehicles that will not enhance their company or are engaged in living affluently." Other reasons are that even those that have the equipment do not maintain them and so have the equipment constantly breaking down. These challenges confirm the findings of Zawdie and Lanford, (2000) which points to these challenges as affecting most SMEs in the sub Sahara Africa.

4.6.4 Financial management

It is evident from the responses from both sides of the study that some common factors contribute negatively to the survival and growth of SMEs. These factors include financial indiscipline and delays in the payments for ongoing and completed projects. But beyond that there were varied views on the other factors that affect survival and growth. The consultants cited the lack of experts or qualified personnel, the inability or reluctance to employ advanced technological methods and the lack of modern management skills as the reasons for the financial woes of the contractors. The contractors on the other hand, stated delays in payment for work done as reason for their inability to have a sound financial footing, acquire new plant and equipment, hire and retain qualified staff and embrace new technologies in project execution. Adding to this is the lack of access to low interest loans since interest on loans taken erode any financial gains they could have made.

4.6.5 Strategic Management

None of the respondent within the contractors could show that they have ever used strategic management skills in their operations or in executing a project. This situation was also confirmed in the responses from the consultants that the contractors lack basic knowledge in modern management practices and do not also provide training to their employees. The consultants intimated that most contractors are unwilling to learn new

management methods and for those who accept to learn these methods they refuse to use the skills acquired in the practice.

4.7 Contractors Response on Growth Indicators

Respondents were asked to supply information on their company assets, staff strength, ongoing projects and turnover for the last 3 years. The responses were recorded as found in Table 4.8, Appendix C. In all 12 respondents out of the 30 were those who had ongoing projects the rest claim they had no ongoing projects and so had laid down the workers.

On the part of growth indicators, all agreed that company assets, staff strength, number of ongoing projects and firms' turnover are all indicators of growth. On the issue of clients' confidence, respondents had varying views. Three (3) out of the 12 respondents did not agree that clients' confidence in a firm would necessarily translate into growth. However, the rest of the 9 respondents representing 60.00% all agreed that clients' confidence in a firm can lead to growth.

4.8 Management Practices and Growth

The various key management practices from responses of the contractors indicated they do not practice them in totality. A total of 32% of A4B4 contractors do practice all the various management practices whereas a total of 49% A3B3 indicated they apply all the key management practices in their projects. Aggregately, 40% of the two categories of contractors apply management practices as against 60% of contractors ignore these good management practices where these practices are generally not adhered to. This confirms the responses from the consultants view on Table 4.7 that majority of the contractors do

not apply modern methods of management practices in their operations. The absence of this practices they indicated has led to poor performance and lack of growth.

All the consultants agreed that company assets, staff strength, ongoing projects, clients' confidence, and firm's turnover are indicators of growth. The contractors also agreed that all the variables considered are indicators of growth except 3 respondents representing 10%, did not agree that clients' confidence would necessarily lead to growth. Not that withstanding, it means that majority representing 90% agreed with the consultants that all the variables are indicators of growth. With reference to number of ongoing projects, 17 contractors representing 56.00% did not have any ongoing project and therefore admitted that this was having toll effect on their growth. Taking into account the assertions of both the consultants and the contractors used in the study, it is clear that growth has a direct relationship with management practice. Real growth of contractors largely depends on their management capabilities. The congruence of the two is relevant as they ensure sustenance of development, expansion and growth of every organization.

4.9 Relationship between Management Practices and Growth

An analysis from the responses of consultants and contractors, it was discovered that a total of 8 contractors were found to have adhered strictly to management practices. 9 others were rated as doing relatively well and the rest 13 do not adhere to management practices and are therefore regarded as not doing well.

A further investigation was carried out by selecting 8 contractors out of the 13 contractors who are not growing based on the indicators of growth and compared with 8 contractors who are growing. The results were tabulated as shown on Table 4.8 below and hence the basis for comparism between managing practices and growth indicators.

Table 4.8: Comparing Management Practices to Growth Indicators of Contractors

Contractors with positive growth indication						Contractors with negative growth indication					
Management practices	Indicators of Growth					Indicators of Growth					
	CA	SS	PO	TO	CC	CA	SS	PO	TO	CC	
Organizational Structure	6 (75%)	4 (50%)	5 (63%)	5 (63%)	3 (38%)	2 (25%)	2 (25%)	1 (13%)	1 (13%)	0 (0%)	
Management of Projects	7 (88%)	7 (88%)	8 (100%)	7 (88%)	3 (38%)	1 (13%)	2 (25%)	3 (38%)	1 (13%)	1 (13%)	
Operations Management	6 (75%)	7 (88%)	7 (88%)	4 (50%)	2 (25%)	1 (13%)	0 (0%)	1 (13%)	1 (13%)	1 (13%)	
Financial Management	5 (63%)	5 (63%)	6 (75%)	4 (50%)	4 (50%)	1 (13%)	2 (25%)	0 (0%)	1 (13%)	0 (0%)	
Plant & Equipment Mgt	6 (75%)	5 (63%)	7 (88%)	5 (63%)	4 (50%)	1 (13%)	1 (13%)	0 (0%)	0 (0%)	0 (0%)	
Human Resource Mgt	5 (63%)	6 (75%)	5 (63%)	3 (38%)	3 (38%)	3 (38%)	3 (38%)	2 (25%)	1 (13%)	1 (13%)	
Strategic Management	7 (88%)	5 (63%)	6 (75%)	6 (75%)	4 (50%)	2 (25%)	3 (38%)	2 (25%)	1 (13%)	1 (13%)	

CA= Company Assets; SS= Staff Strength; PO= Projects Ongoing; TO= Turnover; CC= Clients Confidence

It was revealed that contractors who had organizational structure in place also had company assets. For those doing well, it was discovered from Table 4.8 that 75% of those who had organizational structure also have company assets. Compared to contractors who are not growing, it was discovered that only 25% of those who had organizational structure also had company assets.

Generally, the organizational structures of the 8 contractors doing well compared to all the growth indicators, ranges from 38% to 75% with an average of 57% as against those not growing which also ranges from 0% to 38% with an average of 15%. With reference to management of projects, contractors growing ranges from 38% to 100% with an average of 80% as against contractors not growing ranging from 13% to 38% an average of 20%.

Again from Table 4.8, operational management practice ranges from 38% to 88% with an average of 65% and that of those not growing ranging from 0% to 13% an average of 10%.

On their financial management, it ranges from 50% to 75% with an average of 60% as against 0% to 25% with an average of 10%. On the same table, plant and equipment management practice as compared to growth indicators showed a range of 50% to 75% with an average of 68% as against 0% to 13% with an average of 5%.

Human resource management practice has for contractors doing well ranging from 38% to 75% with an average of 55% and that of those not doing well also ranging from 13% to 38% with the average being 25%. The final practice, strategic management practice also ranges between 50% to 88% with an average of 70% as against contractors not doing well which ranges between 13% and 38% with an average of 23%.

From the above interpretation it was observed that the overall average results for management practices and growth indicators for contractors doing well ranges between 57% and 80%. For the contractors not growing, the overall average ranges between 10% and 25%. The results showed a general trend that all pairing between management practices and growth are higher in the contractors doing well than the pairing in contractors not growing.

From the above discussion, it is clear that contractors growing adhere to good management practices and ~~this is reflected~~ in the indications of growth. It is also clear that those who do not have good management practices do not grow and that is shown by the indicators of growth. Generally, it is concluded that management practices has a direct linkage or relationship with growth.

4.10 Summary

This chapter has presented the analysis and discussions of the results obtained from the data collected. The demography of the respondents has been analysed. Among other reasons, it concluded that the respondents (consultants and contractors) were competent, experienced and capable of exercising sound judgment and that their responses could be relied upon for the study. Also based on the findings, it was concluded that the predicaments of the contractors was alarming and therefore, contractors need to take advantage of good management practices such as good organizational structure, operational management, well structured strategies, plant and equipment management, management of human resource, sound financial management, and a well planned management scheme for projects to be able to enhance their development and growth. Generally the study has shown that contractors with good management practices are growing and contractors who are not growing are found not having good management practices. The next chapter, which is the fifth chapter, presents the summary of key findings of the study and makes conclusions and recommendation for further study.

CHAPTER FIVE

SUMMARY OF FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter presents summary of the main findings and discussions on the contractor and consultant perspective on key managing practices as leading indicators necessary for growth of small and medium road contractors in the northern region of Ghana. In analysing the subject matter, the views of the contractors and the consultants involved in the road sector of the construction industry were sought through the use of a structured interview guide. This chapter therefore presents the conclusions and recommendation based on the findings from previous chapters.

5.2 Summary of Findings

5.2.1 Management Practices

The key management practices identified as catalyst to the development and growth of contractors in the study included Organizational structure of firms, Management of projects, Operational management, Financial management, Plant and Equipment management, Human Resource Management and Strategic management of firms.

The study revealed that there was indeed some significant level of ignorance on part of the contractors with regards to their understanding of basic principles of management. The key management practices considered in the study showed that nearly 50% contractors lack management skills that could help promote their performance and growth.

On organisational structure, 70% of contractors do not have any defined level of authority and lines of communication. Perhaps this was because of the dominance of the owner-manager phenomenon and the fact that the owner-manager wants absolute control over the affairs of the firm. Further, 53% of contractors consider management of projects as one key factor to growth.

With regards to operational management, it was revealed that, only 47% contractors are engaged in operational management practice. It was found out that, the contractors' inability to adopt new technologies and innovative management techniques in their operations resulted in high overhead cost.

On the issue of financial management, the study showed that 53% of the contractors do not update accounting records. They also did not have qualified accountants and depend solely on financial consultants to examine and prepare their end of year audited accounts for the purposes of their tax obligations and meeting the requirements of tendering for projects.

Management of plant and equipment was relatively poor; only 40% of A4B4 and 53% of A3B3 had maintenance policy. The rest contractors did not have any maintenance policy for their plant and equipment. However, it came out that majority of them did not own plants and equipments and relied solely on hiring as and when they have a project.

It was also revealed that 53% of A3B3, and as low as 33% of A4B4 contractors had human resource policy. The remaining aggregate of 57% did not have any human resource management policy. The contractors did not have permanent professional staff and their recruitment was not based on any merit but based on acquaintance. Most of them also depended on relatives who had little or no technical knowhow. A few of them

however recruit workers not based on academic qualification but, on working experience of the person.

The study further showed that 63% of the contractors had no management strategy in carrying out their projects. It also came out that even though they did not have this strategic plan they still agreed that they have employed some form of "smart thinking out of the box" to save time and cost in one or more past projects executed.

Generally the study has revealed that contractors with good management practices are growing and contractors who are not growing are found not to have good management practices.

5.2.2 Growth Indicators

Growth indicators identified include Company Assets, Staff strength, ongoing projects, turnover and client confidence.

On Company Assets, all contractors and consultants representing 100% response agreed that the increase in assets of a firm signifies growth of that firm. Again, 100% of both consultants and contractors admitted that the staff strength of an organization points to a fact that the firm is growing.

The number of ongoing projects in a firm has a telling effect on the growth of that firm. In the study, 100% of all contractors and consultants agreed that the number of ongoing projects of a firm is an indication of growth.

On turnover of a company, all contractors and consultants, representing 100%, again admitted that it was an indicator of growth. On contractors under the study, only 40% furnished the researcher with their turnovers for the last three (3) years. The rest 60%

could not show evidence of their turnovers. The consultants also were of view that contractors do not want to give their true turnovers for fear of high taxation.

"Clients' confidence" in a firm was agreed by all the consultants that it was an indicator of contractor growth. However, on part of the contractors, 90% agreed to that assertion but a minority number of 10% thought otherwise. The 10% indicated that clients' confidence in a firm do not necessarily translate into growth and that the two were mutually exclusive.

5.3 Conclusion and Recommendation

5.3.1 Conclusions

Based on the findings of the study, the following conclusions were arrived at:

Having identified the key management practices and their effects on growth, it was concluded that all these practices from the view point of contractors and consultants had a significant influence on the growth of small and medium road contractors in northern region of Ghana. It was also concluded from the findings that small and medium scale road contractors in the region are ignorant and lack knowledge in basic management of construction projects. Above all it was clear that contractors do not put these management principles into practice. The absence of these practices translated into a myriad of constraints facing contractors and therefore they are not able to perform and grow.

Five growth indicators were identified and established as key indicators of growth. Looking at the growth indicators, it was concluded that the contractors did show appreciable signs of growth.

The research identified constraints to growth as largely stemming from poor management practices exhibited by the contractors. The study concluded that contractors with good

management practices are growing and contractors who are not growing are found not to have good management practices. The research concluded that management practices and growth are dependable variables and therefore have a direct relation.

5.4 Recommendation

In the light of the above conclusions, the following recommendations are therefore proposed.

Knowledge update

In order to improve contractors' managerial skills, there is need for continuous work-training programs for owners/managers in the construction industry to update their knowledge and be familiar with project management techniques and processes.

Role of clients

Clients can influence strict management practices of a project in two ways; ensuring consultants take account of these practices in the design of a facility and ensuring that the construction of a facility is carried out in such a way that there is compliance of these practices. This may have financial implications which a client ought to understand, and include in project budget. The benefit is a successful project output.

Breakdowns and shortage of plant and equipment

This problem revolves around two main issues. The first aspect is breakdown of equipment which arises because of poor maintenance habits in the Ghanaian construction industry. It is important that professionals who exist regulate the activities of the industry, set-out principles that enforce individual firms to have proper maintenance department or plan as part of their requirement when tendering for a project. This will go a long way to

ensure that, equipment/machinery breakdown is prevented when undertaking projects, hence eliminating delays.

Contractor Development Incentive Scheme

Clients should institute a national award scheme for contractors and construction companies annually for excellent achievement on projects and their contribution to national development. This could serve as incentive to motivate the contractors to increase performance and growth. Increase in growth would lead to expansion and thereby increasing employment rate, and hence national development.

Loan Guarantee and Plant Pools

An important issue for policy consideration is that plant and equipment pools should be set-up as hiring division in all the administrative regional capitals. The policy should also make arrangements in the form of guarantee with banks to grant equipment loan facilities to the construction companies. Road construction is capital intensive and so if this policy is implemented, companies would be able to increase performance and grow at a faster rate.

Cross Checking Audited Accounts Submitted as Part of Bids

In order to ensure smooth and sound financial administration, clients should ensure that measures are put in place to ascertain the authenticity of these accounts submitted by contractors during bidding. This is because some of the audited accounts submitted by bidders are questionable. This will force contractors to keep proper records of their financial transactions and instil financial discipline within firms that would lead to growth.

5.5 Recommendations for Future Research

One focus of this study is on owner/managers and consultants views on management practices and its effect on growth of small and medium road contractors within the construction industry. Time and other resource limitations for the programme were taken into account in deciding on an appropriate design to address the research objectives.

Consequently, a cross sectional design was adopted for the study. The key management practices considered in the study such as Organizational structure, Operations Management, Financial Management, Human Resource Management, Management of Projects, Strategic Management, Plant and Equipment Management by small and medium scale road contractors was limited to northern region of Ghana. It is therefore recommended that future research will consider much bigger sample as well as extending the research to the whole country to have country wide picture. Such a study will enable valuable insights to be gained on the adoption of management practices as a guide for various owner/managers at different stages of the growth process.

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APPENDICES

KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY, KUMASI

Appendix A: Interview Guidel: Owner/Managers

(Face-to-Face approach)

Interview guide for Small and Medium Road Contractors/ Key informants within the Road Sector:

TOPIC: “Effects of Management Practices on the Growth of Small and Medium Scale Road Contractors in Northern Region of Ghana”.

The purpose of the interview is to obtain your opinion on how small and medium road contractors manage their firms to enhance performance so that they grow continuously.

Let me first of all assure you that data obtained through the interview is purely for academic purpose and will be treated confidential, and that no records kept will bear your identity. I would also like to obtain your permission to record the interview using a tape recorder if you would not mind.

Investigation questions:

PART 1:

The Demographics Information

1. Name of firm
2. Company address/ ~~Location~~
3. Have you registered with Ministry of Roads and Highways?
4. What is the mode of ownership?
 - a) Sole proprietor ☐
 - b) Limited Liability company ☐

c) Partnership ☐

5. Do you have an office?
6. Where is it located?
7. For how long has your company being in existence?
8. Is the Managing Director different from the owner?
9. What contractor classification did you start with?
10. What is your present classification?

PART II

Organizational structure

1. Who owes the firm?
2. Apart from you, do you have any other key person(s) holding some positions in the firm?
3. If you want to send information to your workers how do you do it?
4. Do you talk to them directly or it is passed through an agent?
5. If the workers want to report a problem to you, does the person come to you directly or through your representative?
6. Do you have different departments in your organization?
7. If yes, what are the various departments?
8. Does every department have a head?

Management of projects

1. Which aspect of road construction are you engaged in?
2. If you have a project, who sees to its execution?
- ~~3.~~ Assuming you have a project outside Tamale, do you go to stay at the site or you commute?
4. How do you monitor these types of works?

5. Do you use permanent employees like civil engineers, quantity surveyors and geodetic engineers of the company to do your work or you depend on hired professionals for a short period?
6. Do you at times use personnel of your consultants to assist you carry out some aspects of your work?

Operational management

1. There are three government consultancy firms (Ghana Highway Authority, Departments of Feeder and Urban Roads); which of them do you take projects from?
2. Do you normally set up a camp at the project site for stores, offices, workshops, and accommodation?
3. On a day-to-day basis how and who organizes the work?
4. Do you buy your fuel and lubricants on daily basis from a filling station or you have a station at the site where filling is done?

Financial management

1. How are your projects funded?
2. Are you paid promptly for work done?
3. How are monies accrued from the company disbursed?
4. Are you able to pay your workers promptly and at what intervals?
5. Do you at times go in for a bank loan, overdraft, or receive assistance from friends and family?
6. Do you have qualified personnel to handle your accounts?
7. If yes are they accountants or accounts clerks?

Plant and equipment management

1. As a road contractor, can you please tell me the type and number of equipment you own?
2. How are these equipment managed?
3. Do you sometimes rent them out?
4. Apart from what you have, do you sometimes rent from outside?
5. Do you have a maintenance programme for the plant and equipment?
6. Do you at times give your operators some training?

Human resource management

1. How many workers do you have in all?
2. Are all the workers working on site?
3. What process or criteria do you use to recruit your workers?
4. How many of them are permanent and how many are casual?
5. How many professionals do you have?
6. Do you sometimes employ some relatives in the organization?
7. Do you see them as performing: Above average, Average or Below average?
8. Do you at times give your workers performance enhancement training?
9. What can you say about the attitude of your workers to the work generally?

Strategic management

1. How do you procure your projects?
2. Do you use professionals from your company to price your bills?
3. Do you normally prepare works programme at the start of every new project?
4. Do you monitor and evaluate your projects?
5. What are your plans for the future growth of your firm?

6. Assuming you go on retirement who takes over the firm and how do you decide on this person?

Problems and Suggestions

1. What do you think can be done to improve productivity?
2. What do you think can be done to improve the organizational growth?
3. Are there some government policies you think affects the performance and growth of your organization?
4. What problems does your organisation face in executing its projects?
5. What suggestions in your opinion do you think can help improve performance and growth of your organization?
6. Is there anything that I might not have covered in my questions which you deem necessary?

PART III

Company Assets:

1. Can you please tell me about the physical assets of your firm?
2. Did you acquire them at the inception of the firm?
3. May I find out from you please, which of these assets you had at the inception of the firm?
4. The company's office that you occupy, are you renting or it is the property of the company?
5. When did you acquire the office?
6. With the plant and equipment you have enumerated, what has been the mode of acquisition?
7. Do you see these assets as an indication that your firm has grown over the period?

Human Resource

1. How many workers did you start the company with?
2. How many were skill and how many unskilled?
3. How many professionals did you have at the inception of the company?
4. How many workers do you have now?
5. How many permanent professionals do you have?
6. In all how many permanent and casual workers do you have?
7. Do you consider the current numerical strength of the workers as an indication that the company is growing?

Ongoing Projects

1. How many projects did you have in the last five years?
2. How many projects do you have now?
3. Do you have the capacity to handle more projects than you have now?
4. Has there been a point you have refused to take on more projects?
5. Looking at the number of projects executed by the company in the last five years to date; do you in your opinion feel the company is growing?

Company Turnover

1. Do you prepare an annual account for your firm?
2. Can you please tell me about your turnover in the last five years?
3. What was your turnover last year?
4. Taking into account the company's turnover for the last five years to date, do you think your company is experiencing growth?

Clients' Confidence

1. Do you normally undergo competitive bidding for all your projects or there are times you are given a project through sole sourcing?

2. Do you finish your projects within the time frame?
3. Have you ever been called back to make good defects on a project you have done before the end of defects liability period?
4. Has there been a time you have been made to pay liquidated and ascertained damages for a default on a project?
5. Has any client ever paid money or compensation of any form to you for finishing a project far earlier than the scheduled date?
6. Has there been an instant that some clients have openly praised or expressed appreciation for good work done and promise to do more jobs with the firm?
7. Has this goodwill resulted in your company getting more jobs?
8. With all what you have told me, do you see clients' confidence in your firm as an indicator of growth?

Conclusion

I wish to thank you for the insights I have gained from your rich experience and for taking some time off your busy schedule in order to make this meeting possible. I hope you would accord me the same opportunity when the need arises again.

Thank you for your time.

**KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY,
KUMASI**

Appendix B:: Interview Guide: (Face-to-Face approach)

TOPIC: “Effects of Management Practices on the Growth of Small and Medium Scale Road Contractors in Northern Region of Ghana”.

The purpose of the interview is to obtain your opinion on how small and medium road contractors manage their firms to enhance performance so that they can grow continuously.

Let me first of all assure you that data obtained through the interview is purely for academic purpose and will be treated confidential and that no records kept will bear your identity. I would also like to obtain your permission to record the interview using a tape recorder.

PART IV: CONSULTANTS

The under listed contractors take jobs from one or more of the road consultancy firms of which you belong – Ghana Highway Authority, Departments of Feeder and Urban Roads.

1. Can you please tell me briefly about your organisation?
2. What is the role of your organization in the management of projects that these contractors undertake with your organization?
3. Do you see the following as an indicator of growth?

Indicators of Growth	Dept. Of Feeder Roads		Dept. of Urban Roads		Ghana Highway Authority	
	Maintenance Engineer	Quantity Surveyor	Maintenance Engineer	Quantity Surveyor	Maintenance Engineer	Quantity Surveyor
Staff Strenght						
Company Assets						
Ongoing Projects						
Company Turnover						
Clients' confidence						

4. Can you briefly assess the performance of each of them who have undertaken projects with you as being: Very Good, Good, Average or Below Average?
5. Do you think they have the required human resource, plant and equipment to execute these projects?
6. How do you assess their financial commitments on the projects?
7. Are they prepared to inject in funds to push these projects if even their payment certificates are not yet honoured?
8. Do they use permanent employees or hired professionals for a short period to execute the woks?
9. Generally, how do you assess the management abilities of these contractors?
10. Do they comply with existing management practices of the construction industry?
11. Do you see them as growing?
- ~~12.~~ What in your opinion do you think they do that does not promote their growth?
13. What do you think can be done to improve their performance?

14. Is there anything that you think is necessary that I have not asked but can help improve the performance of these class of road contractors and as well enhance growth?

Conclusion

I wish to thank you for the insights I have gained from your rich experience and for taking some time off your busy schedule in order to make this meeting possible. I hope you would accord me the same opportunity when the need arises again.

Thank you for you for honouring this interview.