

**UNIVERSITY OF CAPE COAST**

**MANAGEMENT ACCOUNTING PRACTICES AND  
PERFORMANCE OF MANUFACTURING FIRMS IN THE KUMASI  
METROPOLIS**

**BY**

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**THESIS SUBMITTED TO THE DEPARTMENT OF  
ACCOUNTING AND FINANCE OF THE SCHOOL OF BUSINESS,  
COLLEGE OF HUMANITIES AND LEGAL STUDIES, UNIVERSITY  
OF CAPE COAST IN PARTIAL FULFILLMENT OF  
REQUIREMENTS FOR AWARD OF MASTER OF COMMERCE  
DEGREE IN ACCOUNTING**

**MARCH 2016**

**DECLARATION**

**Candidate's Declaration**

I hereby declare that this thesis is the result of my own original work and that no part of this has been presented for another degree in this university or elsewhere.

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**Supervisor's Declaration**

We hereby declare that the preparation and presentation of the thesis were supervised in accordance with the guidelines on supervision of the thesis laid down by the University of Cape Coast.

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## ACKNOWLEDGEMENTS

I wish to thank Jehovah God for the strength and knowledge given me to write a thesis of this nature. I also wish to express my most profound gratitude to Prof. Edward Marfo -Yiadom, my Principal Supervisor, for his support, patience and guidance throughout this research. I also wish to thank Mr. Augustine Addo, my Co-Supervisor, for his generous assistance, expert comments and his invaluable contribution to the study.

A debt of gratitude is owed to my parents, Mr. and Mrs. Ameny for their support and prayers. I also wish to express my profound gratitude to Nana Quecoo, and my siblings, Vivian, Ernest, Joseph who through various ways, supported me and did all they could and more to get me this far. Despite the distance, they were always there for me. I do appreciate their love and prayers. And to Mrs. Eunice Quarcoo, Heavy, Mark Adlai Gardessey, Henry, Jessica Kuma, and all others who contributed to the study, I say, thank you.

Finally, to my one and only K Nana, I say thank you for being that special person in my life.

## **DEDICATION**

To my dear husband, Dr. Russell OwusuAfrifa and my lovely son,  
Jimmy OwusuBoahenAfrifa.

## ABSTRACT

This study explored the management accounting practices among manufacturing firms in the Kumasi Metropolis and examined the impact of its adoption on firm performance. The benefits firms derive from implementing management accounting practices, factors that affected the extent of use of management accounting practices and the relationship between the use of management accounting practices and firm performance are discussed in the study. A questionnaire was administered to 150 manufacturing firms in the Kumasi metropolis which elicited 105 useable responses.

The results show that costing system, budgetary system, performance evaluation system and strategic management accounting are the key management accounting practices adopted by manufacturing firms within Kumasi metropolis. Also, the key benefits associated with management accounting practices of manufacturing firms in Kumasi can be seen from the following areas: planning the future strategies, tactics and operations, controlling current activities, measuring and evaluating performance, optimizing the use of firm's resources, reducing subjectivity in the decision making process and improving internal and external communication.

It is evident that key determinants of the extent of adoption of management accounting practices include market competition, characteristics of the accounting staff, owner/manager participation and changes in technology.

Overall performance of selected manufacturing firms in Kumasi metropolis is relatively high. It is therefore recommended that management accounting practices in the manufacturing firms in Kumasi should be strengthened to enhance performance.



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## CHAPTER ONE

### INTRODUCTION

#### **Background to the Study**

It is believed that industrialisation is one of the major anchors for economic growth and development (Ajibolade, 2013). According to Ajibolade (2013), countries worldwide especially the developing economies have strived to direct their primary focus of economic planning and management in achieving growth and development to the transformation of their economies through industrialisation. One facet of industrialisation which has gained popularity is the manufacturing sector. The Manufacturing sector is a key driver of industrialisation; however, in the developing world with much emphasis on African, the sector has not achieved desirable sustainable performance (Ayodele&Falokun, 2003).

The challenges of improving performance of the manufacturing sector globally and in the African are no different in Ghana. Ghanaian manufacturing sector performance has dwindled over the years. Immediately after independent, Nkrumah's administration stepped up the industrialisation policy which saw manufacturing aspect of industry accounting for 10% of Gross Domestic Product (GDP) in 1960, 14% to GDP in 1970 and 10% in the 1990 (Obedi, 2016). During these periods, manufacturing was seen not as the main driver of the industrialisation policy but also a major contributor to economic growth and development.

This sector which is praised in terms of performance, is currently struggling to achieve positive growth. The Association of Ghana Industries (AGI) has been crying that the manufacturing sector of Ghana continues to

shrink and Ghana is on the verge of losing its industrial base. The criticality of this concern was echoed when the manufacturing sector recorded an unprecedented -8% growth rate in 2015 (Obedi, 2016). According to Association of Ghana Industries (AGI) (2013), some of the causes of the poor performance include competition, continuous technological challenges, poor power stability and cost of business.

Notwithstanding the current performance trend, it is believed that the Ghanaian manufacturing sector still has potentials to achieve desirable results and contribute significantly to economic growth if the challenges are addressed (Akoto, Awunyo-Vitor & Angmor, 2013). In view of this, researchers have over the years conducted studies to provide empirical insight into the challenges and possible recommendations. For instance some researchers have investigated how management of the working capital can address the performance (Akoto et al, 2013).

However, these efforts have not arrested the challenges. It is therefore important to consider other relevant areas. Following accounting pundits researchers, adoption of effective management accounting practices by manufacturing firms is an obvious means to approach the challenges of competition, change and costing so as to improve performance (Horngren, Datar, Foster, Rajan, & Ittner, 2009). Management accounting methods and techniques help management of organizations including manufacturing firms to plan, direct and control operating costs and to achieve optimal performance (Gichaaga, 2013)

Management accounting is the “application of appropriate techniques and concepts in processing the historical and projected economic data of an entity to

assist management in establishing a plan for reasonable economic objectives and in the making of rational decisions with a view towards achieving these objectives” (Gichaaga, 2014,p.12).

Effective management accounting practices scan operational environment and provide management with information from its environment to facilitate decision-making and achieve competitive advantages and change management (Smith, 2009). According to McWatters (2001), management accounting adapts to organizational change which are often driven by three major forces: technological change, globalization, and customer needs. A critical review of these characteristics of management accounting practice show that , it is capable to mitigate the factors which cause the poor performance of manufacturing sector in Ghana as asserted by AGI (AGI, 2013).

Therefore, to build a robust, resilient and growing manufacturing sector in Ghana, management accounting practices among the players of this sector need to be assessed. From the discussions above, it can be reiterated that for the manufacturing sector to improve performance and play an integral role in improving the country’s economy, the necessary management practices should be adopted and duly followed. Thus, effective management accounting practice can be a medium through which the manufacturing sector can be viewed as the leading edge of modernization and skilled job creation, as well as a fundamental source of various positive spill overs (Ajibolade, 2013).

Besides the general assertions, theoretically, there are evidences to suggest the relationship between management accounting practice and performance. These theories include institutional theory and the contingency theory (Bette, 2011; Ma & Tayles, 2009). For instance, according to Ma

& Tayles (2009), management accounting practice uses institutional framework as posits by the institutional theory, to identify and interpret the external and internal influencers, minimise threats and investing in opportunities to enhance organisational performance.

Despite the assertions and theoretical evidences supporting the role of management accounting practices (MAP) in improving organisational performance, globally, the subject has not received much empirical attention. The situation in the Ghanaian context is worrying given the current challenges of the sector. The few studies in the Ghanaian context have focused on areas such as MAP and general SMEs (Abor&Effah, 2011; Amoako, 2013) and MAP in the telecommunication industry (Mbawuni&Anertey, 2014). Little or no attention has been given to the manufacturing sector as far as MAP is concerned. It is against these, that the present study seeks to examine management accounting practices and the performance of manufacturing firms in the Kumasi metropolis.

Kumasi metropolis is chosen as the setting for the study because of the relatively low liquidation or exit of the manufacturing firms in Ghana (Davies & Karr, 2015). Despite the challenges face by the manufacturing firms in Ghana, firms in Kumasi have high survival rate. According to Davies and Karr (2015), the survival rates as at the end of 2013 are 79.6% for Accra, 82.6% for Kumasi, 71.1% for Sekondi-Tarkoradi and 66.7% for Cape Coast. It is therefore important to assess the management accounting practices of the manufacturing firms in Kumasi so that the lessons can be a spill over to other parts of Ghana.



## **Statement of the Problem**

The Ghanaian manufacturing sector has been battling with sustainable growth and positive contribution to economic growth and development in recent times. For instance, the contribution of the sector to GDP has moved from double digit to single digit in recent years. Specifically, the contribution to GDP statistics are 7% for 2009, 2010 and 2011; 6% for 2012 and 2013 (GSS, 2014). The manufacturing sector which used to be the driver of Ghana's industry, currently lag behind mining and quarry (GSS, 2014). The most alarming of these is when it recorded its own year-on-year growth rate of -8% growth rate in 2015 (Obed, 2016).

AGI (2013) attributed the poor performance to competition, technological change, power and cost of operation among others. Obed (2016) argued that cost of operation is the driving force of the poor performance. This means that manufacturing sector requires effective cost control system to achieve desired results. Cost control is within effect management accounting practice. This seeks to suggest that there is relationship between management accounting practice and performance of the manufacturing firms (Ajibolade, 2013; Gichaaga, 2013; Horngren, et al, 2009).

Following both theoretical evidences (Bette, 2011; Burns & Scapens, 2000; Ma & Tayles, 2009) and authoritative assertions (McWatters, 2001; Smith, 2009), it is clear that management accounting practices can influence performance of manufacturing sector. However, there exist limited empirical literature in relation to the sector. Although it is easy to obtain prior studies on management accounting practice it is equally difficult to associate them with the manufacturing sector. Most of the few studies on management accounting

practices include Abor and Effah (2011); Amoako (2013); Mbawuni and Anertey (2014).

None of the above studies have strived to demonstrate how management accounting practices can address the performance of the manufacturing firms in Ghana. For instance, Abor and Effah (2011) explored E-accounting practices among SMEs in Ghana; Amoako (2013) examined accounting practices among SMEs in Kumasi and Mbawuni and Anertey (2014) examined application of broad range of management accounting practice used by telecommunication companies in Ghana.

Given the current poor performance of the manufacturing sector coupled with little or no empirical investigation into the relationship between management accounting practice and performance of manufacturing firms in Ghana, there is the need for researchers to turn their attention to fill this underexplored study area. Furthermore, the validity of contingency's central theorem and institutional theory which have their assumptions applied to explaining management accounting practice and organisational performance (Bette, 2011; Burns &Scapens, 2000; Ma &Tayles, 2009) need to be tested within the framework of manufacturing sector. This is essential as some have attributed the poor performance of the manufacturing sector to environmental forces such as competition and technological change (AGI, 2013). Responding to these gaps, the present study purports to examine management accounting practices and performance of manufacturing firms in Ghana.

## **Objectives of the Study**

The general objective of the study is to explore the management accounting practices and examine the extent to which the level of adoption affects the performance of manufacturing firms in the Kumasi Metropolis.

The specific objectives of the study are to

1. Identify the management accounting practices adopted by manufacturing firms in the Kumasi Metropolis.
2. Evaluate the benefits associated with the use of appropriate management accounting practices by manufacturing firms in Kumasi
3. Determine the factors that affect the use of management accounting practices among manufacturing firms in the Kumasi Metropolis.
4. Assess the level of economic and operational performance of manufacturing firms in Kumasi Metropolis.
5. Examine the relationship between Management accounting practices and organizational performance of manufacturing firms in the Kumasi Metropolis.

## **Research Questions**

1. What are the management accounting practices adopted by manufacturing firms in the Kumasi Metropolis?
2. What benefits do manufacturing firms in the Kumasi Metropolis derive from the use of appropriate management accounting practices?
3. How are manufacturing firms in Kumasi Metropolis performing?

## Hypotheses

The following hypothesis will be tested:

1.  $H_0$ : Market competition, characteristics of the accounting staff, owner/manager participation and changes in technology do not have significant influence on the use of Management accounting practices.

$H_1$ : Market competition, characteristics of the accounting staff, owner/manager participation and changes in technology have significant influence on the use of management accounting practices.

2.  $H_0$ : There is no significant relationship between the performance of manufacturing firms and the management accounting practices adopted.

$H_1$ : There is a there is a significant relationship between the performance of manufacturing organizations and the management accounting practices adopted.

## Scope of the Study

The study investigates management accounting practices of manufacturing firms in the Kumasi Metropolis, in Ghana, and the impact of the adoption and use of such management accounting practices on firms' performance. As explained in the background, Kumasi is chosen as the base of this study because of the resilient characteristics of manufacturing firms in this area despite the general challenges of the manufacturing sector in Ghana (Davies & Karr, 201). It is considered as the centre and the hub of commercial

activities which support manufacturing activities (KPMG, 2008). According to KPMG (2008), Kumasi has investment potentials to attract investors; therefore, exploring the role of management accounting practice in performance management of manufacturing firms in Kumasi is timely.

The study used primary data rather than secondary data due to unavailability of statistics about variables of interest in this study. Therefore secondary instruments would not be used. A cross –sectional survey design is used as strategy for the study. This is used because the study embraces different firms which form the cross sections.

### **Significance of the Study**

Completing this study brings together aspects of theory and practice. The results from the study contribute to the institutional theory. The formal structural change of the first dichotomous assumption of the institutional theory posits that management accounting practice would contribute positively to organisational performance (Burns &Scapens, 2000). The findings from the statistical analysis of the fifth objective are consistent with this assumption. Therefore, provides empirical contribution to this theory.

Additionally, informal structural change of the institutional theory also assumes that ownership structure, technological conditions and key personnel create the need for change in management accounting practice (Ma &Tayles, 2009). This theoretical assertion was also evident in the empirical evidence provided by the results from the determinants of management accounting practice as assessed in the third objective. The study has therefore contributed

to this theory by extending its implication to management accounting practice in the manufacturing sector in Kumasi metropolis.

Besides the theoretical contribution to the institutional theory, the findings contribute to the contingency theory. Following this theory, management accounting practices are contingencies for organisational performance while technological change and marketing conditions such as competitions are contingencies for management accounting practices (Battilana&Casciaro, 2012; Morton & Hu, 2008). The findings in the third and fifth objectives of the present study affirm these assumptions. This means that management of manufacturing firms in Kumasi metropolis can apply this theory in their operational decisions and policy.

The study has also provided measurement scale for organisational performance. It has dwelled on the literature to develop relevant indicators for the measurement of performance. This provides contribution to future studies where primary assessment of performance is the focus rather than the secondary based assessment. This scale may be adapted in studies which are even in different sector.

In practice, the current study is significant for management of manufacturing firms in Ghana. The results from the relationship between the use of Management accounting practices and the performance in the context of manufacturing firms in the Kumasi Metropolis provides direction for performance management. Since the results revealed significant positive influence of management accounting practices on performance, management could use MAP in performance driving policy.

Originating from recognition of the increasingly important role and contribution of the manufacturing industry as well as the recent promotion and supporting policy on developing manufacturing firms, this research study is considered a contribution to improvement of performance of manufacturing firms in Ghana through the adoption of appropriate management accounting practices.

Moreover, the study provide results that may assist policymakers, in areas such as the level of use of Management accounting practices among manufacturing firms and factors that affect the use of Management accounting practices that may ensure that future policy decisions made by the management, and other groups with an interest in manufacturing firms are evidence based. The findings can be specifically informative for policy makers' intent on developing management accounting skills among Ghanaian manufacturing firms.

The findings of this study will also bring to the attention of development agencies the current Management accounting practices of manufacturing firms and how it affects their performance. As a result, it will serve as the basis for organizing training programmes, seminars and workshops on effective management accounting practices.

### **Organization of the Study**

The study is organized in five chapters. Chapter one entails the introduction to the research which covers the background to the study, the statement of the research problem, objectives of the study, the research

questions, hypothesis to be tested, scope of the study, significance of the study and organization of the study.

Chapter two reviews related literature. This chapter discusses extensively the theoretical framework of management practices which unearths the concepts used in the study provide theoretical justifications to proposed relationships or associations. Similar studies in the area of management accounting practices are also discussed and reviewed in this chapter in addition with a discussion on the key study variables. Chapter three covers the methodology of the study. Chapter four presents analysis of the data gathered in the survey to obtain meaningful information and relationships. Finally, chapter five summarizes and provides significant conclusions for the study. It also makes some recommendations to improve performance of manufacturing firms in Ghana and gives suggestions for future study.



## **CHAPTER TWO**

### **REVIEW OF RELATED LITERATURE**

#### **Introduction**

This chapter reviews relevant literature on management accounting practices and organizational performance. The chapter is divided into four sections. The first section presents the theoretical framework underpinning the study. The next section reviews relevant empirical literature, the third section considers key concepts and variables of the study and the last section discusses the lessons learnt and knowledge gaps.

#### **Theoretical Review**

Theoretical postulations or justifications are required for the evaluation of relationships between the various variables in the study. For this reason the study adopts the institutional theory and the contingency theory. These theories help develop the key constructs and the interrelationships between the proposed concepts.

#### **Institutional Theory of Organisations**

The institutional theory of organizations is an adaptive change process framework. It examines the impact of external environment factors and market conditions on organisational change and development (Barnett &Caroll, 1995). The institutional theory depends, heavily, on the social constructs to help define the structure and processes of an organization (Scott, 2001). The most fundamental principle and distinct feature of the institutional theory is in conformity. Within the old institutional economics (OIE) theory, institution is defined as: “a way of thought or action of some prevalence and permanence,

which is embedded in the habits of a group or the customs of a people” (Burns &Scapens, 2000).

Using institutional theory, Burns and Scapens (2000) have conceptualized management accounting change as change in organizational rules and routines. Under old institutional economic (OIE) theory, management accounting is conceived as a routine, and potentially institutionalized, organizational practice. By being institutionalized, management accounting practices can both shape and be shaped by institutions which govern organizational activity.

In OIE there are three dichotomies which offer insights into the process of management accounting change. They are: (1) formal versus informal change; revolutionary versus evolutionary change; and (3) regressive versus progressive change (Burns &Scapens, 2000). Burns and Scapens (2000) conceptualised the formal versus informal change dichotomy as the most appropriate for explaining the relationship between management accounting and organizational change.

In this study, the organisational change is expanded to include changes in organisational performance. Therefore, the theoretical assumption underlying the first dichotomy provides that there is a relationship between the level of management accounting practices and organisation performance. This supports the fifth specific objective of study which seeks to examine the relationship between management accounting practices and performance of manufacturing firms in Kumasi.

Formal and informal management accounting change is used to imply that change is not specifically directed (formal change), but may evolve out of the intended actions of the individuals who are enacting and reproducing organizational routines (informal change) (Meyer & Rowan, 1977). Mat (2010), formal change occurs through the introduction of new management accountingsystems and techniques, which in turn, engender the organization to change including organisational performance.

Therefore, management accounting practices include formal practices such as costing system, costing techniques, budgetary system, performance evaluation system and strategic accounting (Smith et al. 2005). These theoretical management accounting practices are explored among the manufacturing firms within the study frame. This provides theoretical concepts underlying the first objective of study which focuses on identifying the MAP adopted by these firms.

In contrast, informal change occurs when change in an organization's operation condition such as ownership structure, technological conditions and key personnel create the need for change in management accounting practice (Ma & Tayles, 2009). The theoretical expansion of the information structural assumption of the first dichotomous provided by Ma & Tayles (2009) has also revealed some determinants of management accounting practices. From the theoretical assumption, MAP is determined by factors change as ownership structure, technological conditions and key personnel. This would serve as the basis for assessing the determinants of MAP in the manufacturing firms which is the subject of specific objective three.

On the other hand, the other two dichotomies, i.e., revolutionary versus evolutionary change, and regressive versus progressive change, involve a disruption to existing routines and institutions, and focus on a value system in management accounting changes process (Chenhall, 2003; Lapsley&Pallot, 2000). This suggests the value creation benefits associated with the adoption of management accounting practices. This suggests how management accounting change is intertwined with a changing organizational design and strategy to provide organisational wide benefits; these have been the most consistently used organization characteristic and variable in past research (Chenhall, 2003; Lapsley&Pallot, 2000).

By extension, the two remaining dichotomous suggests that management accounting practices drive organisational wide value for the adopters and not only limited to performance measure. This implies that by the assumption of revolutionary versus evolutionary change, and regressive versus progressive change, one can assess the benefits derived from adopting management accounting practices which may or may not be direct performance related.

The strength of the institutional theory lies in the concept of unifying the environment and management. Management knows the demands within the environment and is willing to incorporate them in the organization's daily operations (Gathungu&Owanda, 2012). However, theory has some few weaknesses as well. One of such weaknesses is that it puts an enormous amount of restraint on management to conform to requirements or rules within its own environment. Too much constraint could prove to be damaging to the firm since it could inhibit creativity, diversity, and versatility within a given field (Scott 2001). Scott (2001) goes on to comment that another weakness of

the institutional theory of organizations is the creation of “cookie-cutter” organizations. This causes the legitimacy of firms that are outsiders of the “cookie-cutter” set-up to be questioned.

### **Contingency Theory**

The Contingency theory posits that an appropriate match between organizational characteristics to contingencies will improve organizational effectiveness (Morton & Hu, 2008). However, in the contingency theory of organizations, there is no universally acceptable model of the organization that explains the diversity of organizational systems design.

A contingency perspective suggests that effective management accounting systems should align with both internal and external factors (Battilana&Casciaro, 2012). Following Battilana and Casciaro (2012), the determinants of management accounting practice can be broadly classified into internal factors and external factors. The internal factors can be likened to the ownership structure or management and key personnel as reviewed under the first dichotomous assumption of the institutional theory. Similarly, the external factors can be likened to technological change, competition and market forces. These theoretical factors would be empirically tested under the third objective of study.

Depending on the match between management accounting system characteristics and these various factors affecting the organization, different levels of effectiveness or performance might be witnessed. Central to the contingency approach in examining these relationships is the notion of fitness. This study thus aims to empirically investigate the validity of contingency’s

central theorem that organizational performance depends on the fit between organizational context and structure.

Waterhouse and Thiessen (1978) expanded the organizational context to include both environmental and technological factors, while Simons (1987) incorporated business strategy into these measures. The identification of contextual variables in this study is traced from the original structural contingency frameworks developed within organizational theory. Early accounting researchers focused on the impact of environment and technology on organizational structure (Otley, 1980; Waterhouse & Thiessen, 1978). According to Chenhall (2007), a new research stream is related to the role of strategy. It has been incorporated in the traditional organizational model which suggests important links with environment, technology, organizational structure and MCS.

Over the last few decades, a number of innovative management accounting techniques have been developed. This innovation is needed to support modern technologies and new management process. Abdel-Kader and Luther (2008) note that “the new techniques have affected the whole process of management accounting (planning, controlling, decision making and communication) and have shifted its focus from a ‘simple’ role of cost determination and financial control, to a ‘sophisticated’ role of creating value through the deployment of resources”. It also has been argued that these ‘new’ accounting techniques are important in the search for a competitive advantage to meet the challenge of global competition.

Thus, to adapt to these technological development and competitive environment, firms must design a MAS that is congruent with the new requirements (Gerdin, 2005). However, it is also noted that few organizations have adopted these new techniques. As cited by Abdel-Kader and Luther (2008), Tillema (2005) explains the appropriateness of using advanced techniques is dependent on the circumstances in which these techniques are being used and this gives rise to the need for a contingency theory perspective.

Many researchers suggest that an appropriate accounting system depends upon organizational contextual variables (Gordon & Miller, 1976; Otley, 1980; Waterhouse &Tiessen, 1978). For example, Otley (1980) proposed the need to identify specific aspects of an accounting system associated with certain defined circumstances and demonstrate an appropriate matching.

The contingency approach to management accounting is based on the premise that, there are no universally appropriate management accounting systems (MAS) that applies equally to all organizations in all circumstances (Waterhouse &Tiessen, 1978). Thus, the complex relationship between MAS, its contextual variables and its impact on organizational performance has attracted numerous researchers to investigate this issue (Baines &Langfield-Smith, 2003; Jermias&Gani, 2002; Laitinen, 2006).

Contingency theory is relevant to this study, in that it is paramount to explain how accounting systems might be affected by the fit between environmental and organizational factors. Gordon and Miller (1976) suggested the usefulness of contingency theory for developing effective management

accounting systems. Gordon and Miller (1976) proposed that the design of accounting information systems should be dependent on firm-specific contingencies where environmental, organizational and decision style variables could contribute to understanding such systems.

Drawing upon a structural contingency theory of management accounting, this study examines how technology and environmental factors determine the degree of changes in management accounting practices. This theoretical inference is drawn to support the third specific objective of study which purports to assess factors that affect the choice of appropriate management accounting practice. Further, this study examines whether firm performance is contingent on the use of appropriate management accounting practices within technological development and a competitive environment. This also supports the fifth specific objective as outlined in the chapter one of this thesis.

Notwithstanding the strength of the contingency theory in establishing links between management accounting practices and organizational performance, critics contend that some of its assumptions cannot be applied to the real world (Danese, 2011). Some of these critics are of the view that it is not possible for managers to determine all the factors relevant to the decision making situation. This is because of constraints of time, money and ability, managers can neither collect complete information about the environment nor analyse it complete (Mikes & Kaplan, 2013, Taylor & Taylor, 2014).

Moreover, while the contingency theory posits that companies must always try to fit with their contingencies (Betts, 2011), there is a contention



that it is not always wise for firms try to attain a fit with their contingencies for the reason that as the firm changes its systems to match the existing contingencies, the contingencies themselves also keep changing, and thus, changing the systems within the firm would not offer the desired fit (Donaldson, 2006).

### **Adopted Theory**

An examination of the impact of external environmental factors and market conditions on organizational change and development is very critical to the performance of manufacturing firms. This ideology is derived from the institutional theory which proposes an adaptive change as a means of realising high performance by manufacturing firms. From such an ideology, the study's objective of identifying factors that influence or affect management accounting practices within manufacturing industries is easily developed. These factors are market conditions, external environmental factors and structural or internal organizational change. It stands to reason from the institutional theory that when organizations adapt quickly and efficiently to these conditions, it would be easy to use new trend of management accounting procedures to boost their performance.

The concept of the institutional theory also set relationship between management accounting practices and performance of manufacturing firms. It could be inferred from such relationship that if firms rigorously adapt to new changes then the firms stand to benefits from such new methodology. On the other hand, if such adaptations are not made, then there will be less development in the performance of the firms.

From the institutional theory, the conceptual analysis drawn by Burns and Scapens (2000) where the formal versus informal change dichotomy is reasoned as the most appropriate for explaining the relationship between management accounting and organizational change is adopted. Therefore, in testing the relationship between management accounting practise and organisational performance as outlined in objective five, the organisational change used by Burns and Scapens (2000) is expanded to include changes in organisational performance. Therefore, the theoretical assumption underlying the first dichotomy provides that there is a relationship between the level of management accounting practices and organisation performance.

This study also adopts the contribution of Mat (2010) and Smith et al. (2005) to formal structure assumption of the first dichotomous of the institutional theory. Mat (2010) expanded this assumption to mean change occurs through the introduction of new management accountingsystems and techniques, which in turn, engender the organization to change including organisational performance. Smith et al (2005) stated that some of the formal management accounting practices to meet change include costing system, costing techniques, budgetary system, performance evaluation system and strategic accounting. These theoretical management accounting practices are the theoretical bases for addressing the first objective of study which focuses on identifying the MAP adopted by these firms.

The study adopts the structural contingency theory of management accounting (Gordon & Miller, 1976) and therefore examines how technology and environmental factors determine the degree of changes in management

accounting practices. This supports the third specific objective of study assesses the determinants of management accounting practice.

### **Empirical Review**

A number of studies have been conducted by various authors across the globe on management accounting practices. To help direct the focus of the study and provide a basis for comparison of the findings of this research, this section reviews a number of the available relevant empirical literature on management accounting practices and organizational performance.

A study was conducted by Waweru (1999) to examine the management accounting practices as well as management accounting techniques employed by publicly listed companies in Kenya together with the extent of their utilization. In addition, the type of management accounting reports produced and the frequency of their production were evaluated. The study was based on the hypothesis that the success of any company within a competitive environment largely depends on the availability of quality and timely information for the process of decision making. The study employed the census method of data collection to gather data from all the publicly listed companies in Kenya. The data collected by the use of a semi-structured questionnaire were analyzed using averages, tables, percentages and proportions.

Waweru (1999) indicated that there was no significant relationship between type and process of budgeting and the ownership and sector of the firm. It was also found that the principal purpose of management accounting reports were control and planning. Most of the management accounting

reports was found to be produced monthly. The results also indicated that there was no significant gap between management accounting in theory and management accounting in practice. However, there was an application of quantitative management accounting techniques in Kenya to some degree. Finally, the study found that simple management accounting techniques was preferred to the complex techniques.

Although Waweru (1999) determined the management accounting practices preferred by Kenyan firms, the question of whether or not the success of any company depends on management accounting was not answered. This study aims to answer this question by determining how management accounting benefits the manufacturing firms in Kumasi.

In an attempt to ascertain whether and why the claim by studies in the UK and US that companies are reluctant to adopt advanced management accounting techniques, Adler, Everett, and Waldron (2000) conducted a survey involving management accountants of New Zealand manufacturing companies. The non-probability judgement sampling technique was adopted for the sampling. Data were gathered from 165 manufacturing sites in New Zealand, which were chosen as representative of companies confronted with major environmental change and structural reform. The managers were asked to indicate which techniques were adopted in their company.

A questionnaire that consisted of a vast array of management accounting techniques was used by Adler *et al.* (2000) to offer a fuller set of response options. The scale of measurement was a five-point Likert scale from the most used to the least. The findings disclosed that the New Zealand manufacturing

firms usually adopted traditional management accounting techniques, like standard costing, direct costing and full costing than advanced management accounting techniques, like strategic management accounting.

While the sample size was good, this study aimed to verify claims by studies conducted in the UK and US. However, Alder et al. (2000) conducted the study in a different setting with different characteristics from the prior studies. This makes debatable as to how accurately the findings can verify the claims of the previous studies. Additionally, Alder et al. (2000) did not determine the factors that influence the choice of particular management accounting practices. This study however evaluates the determinants of management accounting practices among manufacturing companies in Kumasi.

Although most managerial accounting researchers have rationally inferred the effect of rising MOH burdens, due to outdated overhead allocation practices from the period of mass production, not many have attempted to quantify the level of manufacturing overheads at which TCS starts to grossly misallocate costs. Thus, Vokurka and Lummus (2001) conducted a simple scenario analysis to determine the level of manufacturing overhead burden at which the implementation of an ABC system make a considerable difference as compared to TCS among U.S. manufacturers. Vokurka and Lummus (2001) compared four fictitious firms that produce the same five products but all with varying MOH burden levels from 6.2% to 40% of total product cost. The study came out with the findings that generally, the greater the overhead rate, the greater the difference between activity-based and traditional costing approaches. As a result of the high cost involved in the implementation of an

ABC system, authors concluded that any firm that has an overhead burden of less than 15% must perhaps not consider the effort.

The study conducted by Vokurka and Lummus (2001) was particularly limited to the consequence of ABC on overhead burden, this study broadens the scope by examining not just relationship between ABC and overhead burden but the relationship between various management accounting practices and both financial and non-financial performance of manufacturing firms.

In India, Anand, Sahay, and Saha (2004) studied cost management practices among Indian firms. The study comprised of 53 CFOs in Indian companies. The study objective was to evaluate the development in cost management practices for instance, applications of budgetary control, and standard costing accounting for overheads in Indian companies. The study also aimed at determining any notable difference in the motivation of management to implement and utilize standard costing as a means of control between companies using traditional costing systems and companies using activity based cost management (ABCM). A survey research design was adopted by the study using questionnaires for collecting the data. The study revealed that the companies succeeded in obtaining accurate information on profit and cost from their ABC cost systems for supply chain and value chain analysis. In addition, the results indicated that the companies had better insight for benchmarking as well as budgeting with ABC.

Rather than just examining the management accounting practices among the Indian firms, Anand, Sahay, and Saha (2004) went further to determine the motivation behind management's preferences. This present

study follows Anand, Sahay, and Saha (2004) in assessing the management accounting practices as well as the determinants of management accounting practices.

Another related study was carried out by Liaqat (2006) to determine the application of contemporary management accounting techniques in Indian companies. A survey research design was employed. The study targeted 530 member companies of India's National Association of Financial Directors and Cost Controllers. Sixty three (63) companies responded, representing a response rate of about 12%. Stratified sampling technique was used to divide the sampling points into two strata, i.e. ABCM user firms and Non ABCM user firms. A five point Likert scale questionnaire was employed.

The study focused on finding evidence on how widely contemporary and traditional management accounting practices were employed by Indian companies. It was discovered that improvement of general cost reduction and profitability were the motive behind the utilization of management accounting in Indian firms. The study also discovered a positive relationship between the adoption of ABC and firm characteristics such as pressure of competition, degree of customization, proportion of overhead to total cost, and business size. None of the variations, however, was found to be at 10% significant level.

Liaqat's (2006) discovery of a significant positive relationship between management accounting practices and organizational performance contrasts Waweru's (1999) findings. The differences in the findings could either be due to the difference in geographical and economic situation at their respective

study settings or the fact that different management accounting practices were considered in the two studies. The findings of the present study will support one of these findings.

Another closely related study was performed by Abdel-Kader and Luther (2006). The authors evaluated the management accounting practices (MAPs) within the food and drinks industry in the U.K. in an attempt to understand the level of MAP's sophistication in addition to the factors that influence implementation of MAPs in this industry. The study adopted a survey research methodology. A five-point Likert scale questionnaire (1 indicating never and 5 indicating very often) consisting of 38 items which required the respondents to indicate the frequency of use of the various MAPs was used for the data collection. They were as well required to assess the importance of each practice/technique by rating them as 'not important, moderately important or important. The questionnaires were sent to 650 executives of the industry and 245 were received, representing a response rate of 38 percent.

The results revealed that while the firms moved into a more uncertain environment, the level of sophistication of management accounting practices increased. Similarly, while their power relative to customers diminished, firms moved up the stages of evolution. The results also revealed that the management accounting systems used in most food and drinks companies were not particularly sophisticated. The study finally indicated that there was little evidence of management accounting directly connected with 'value creation' for the food and drinks industry in general.



The sample size used by Abdel-Kader and Luther (2006) was good enough, and the number of items on the questionnaire used as the measuring instrument ensured comprehensiveness of the measurement. Also, the comprehensiveness of the findings was enhanced by the fact that the study focused on companies within the same industry. This study follows Abdel-Kader and Luther (2006) by conducting the study on firms with similar characteristics – that is manufacturing firms.

Most of the empirical studies reviewed above were conducted in countries other than Ghana. The few Ghanaian studies are not directly related to the subject matter. For instance, Abor and Effah (2011) explored the e-accounting practices among SMEs in Ghana. The study looked at the expectations, realities and barriers in adopting e-accounting. The authors used a survey design with systematic sampling techniques. The findings reveal that SMEs put in place accounting softwares to generate their financial information.

The study of Abor and Effah (2011) used all the SMEs in Ghana without considering the industrial specific effect. Some enterprises may be within the SMEs brackets, they may be technologically inclined because of the industry they operate. The contribution of some of these players in the sample might have affected the findings. The study was also limited to only the technological direction of accounting practice. The present study revises the scope of Abor and Effah (2011) by narrowing the sample to manufacturing firms and extends the scope to capture the management accounting practices.

A recent study by Amoako (2013) examined the accounting practices among SMEs in Kumasi (Ghana) through data based on responses to a structured questionnaire from 210 SMEs. Although the study was situated within Kumasi metropolis, like Abor and Effah (2011), the population was not industrial specific and this may affect the findings because of differential characteristics of the various industries the SMEs may belong. Again, the study limited accounting practices to records keeping. To ascertain robust results, this study focused on the manufacturing sector with attention on the management accounting practices and the consequence on performance. Knowing the true effect of MAP on performance will affect policy direction.

A very close study to the present study within the Ghanaian context is that conducted by Mbawuni and Anertey (2014). They examined the application of a broad range of management accounting practices used by telecommunication companies in Ghana. The study used a cross-sectional survey that yielded 37 useable questionnaires from respondents with varied professions in accounting and finance in MTN Ghana, a leading telecommunication company in Ghana. The findings show that the most used category of MAPs is strategic analysis practices, traditional budgeting techniques, and relies more on financial measures than non-financial measures. The use of costing systems is quite low, prevalent among them are departmental overhead rate and Activity-based Costing.

Mbawuni and Anertey, (2014) study suffered methodological flaws. The topic of the article is not adequately represented by the scope of the study. Although the study sought to consider telecommunication companies, data were collected from only MTN. Similarly, the use of MTN alone does not

constitute a cross-section to warrant the use of cross-sectional design. These methodological inconsistencies might factually affect the findings and conclusions drawn. Therefore notwithstanding the closeness of the focus of this study to the present study, it cannot be used as benchmark or for policy direction and hence the need for further studies.

The absence of crystallised empirical evidences on the subject matter may cause interest groups and parties to turn to literatures from other parts of the world which may not be representative to the Ghanaian settings. For instance, although Waweru's (1999) was undertaken in Kenya, the fact that there are differences in the geographical conditions between Ghana and Kenya limits the extent to which the study findings can be generalized to the Ghanaian settings. Also, while both Waweru (1999) and Liqat (2006) examined the relationships between management accounting practices and organizational performance, they obtained mixed findings. In response to these findings, this study aims to find out whether the situation is different in Ghana. It thus aims to investigate the adoption rate of conventional management accounting practices and their influence performance of manufacturing firms within the Kumasi Metropolis.

### **Concepts and Study Variables**

This section reviews the key variables and concepts of the study. The review focuses on how the variable the constructs management accounting and organizational performance are conceptualized in existing literature. The conceptual review highlights the various management accounting practices adopted by organizations as well as the benefits and determinants of management accounting practices. Additionally, the measures of the

independent variable management accounting practices and the dependent variable organizational performance employed for this study are described. Prior to the above, the evolution of management accounting over the years is discussed.

In another vain, to determine the management accounting practices adopted by the manufacturing firms, this study categorizes management accounting practices into the following dimensions: costing systems; budgeting systems; performance evaluation systems; and strategic management accounting. Such practices are also discussed in this subsection.

## **Management Accounting Practices**

The term management accounting consists of two words – ‘management’ and ‘accounting’. ‘Management’ refers to all level managers in the organization. The word ‘accounting’ not only refer to a mere record of business transaction but also covers other fields of study. Management accounting is a branch of accounting that produces information for managers and forms an important integral part of the strategic process within an organization. It involves the process of identifying, measuring, accumulating, analyzing, preparing, interpreting, and communicating information that helps managers fulfill organizational objectives (Hilton & Platt, 2011; Horngren, Sundem, Stratton, Burgstahler&Schatzberg, 2007).

The Chartered Institute of Management Accountants (UK) views management accounting as an integral part of management process which requires the identification, generation, presentation, interpretation and use of information. Smith (2009) also asserts Management accounting involves the preparation of financial reports for non-management groups such as tax authorities, shareholders, creditors and regulatory agencies.

The term management accounting practices has been defined by Ittner and Larcker (2002) as the various methods especially considered for manufacturing firms in order to support the infrastructure and management accounting processes of the organization. Gichaaga (2014) asserts that management accounting practices can consist of performance evaluation, budgeting, strategic analyses and information for decision-making, among others. They help management acquire relevant information needed to make

meaningful decisions (Alleyne & Weekes-Marshall, 2011). Usually, the larger the organization is, the greater is management's need for information.

In order to adapt to the changes within the business environment, organizations must change their management accounting practices and adopt those that suit the environmental conditions (Gerdin, 2005). Reflecting this view in yet another way, Parker (2002) emphasized that flexibility is an important characteristic of management accounting due to the fact that it assumes that careful attention has been given to ascertain the principal needs of management, many of which cannot be accurately determined in advance. Burns et al. (1999) argued that there have been significant changes in management accounting practices in the UK during the last decade. Libby and Waterhouse (1996) reported that in Canada 31 percent management accounting systems have changed in the last three years. These changes have not only taken place in the developed countries but in developing countries as well (Sunarni, 2013).

As stated by Gichaaga (2014), various researchers have argued that there are various differences in management accounting in theory and the management accounting practiced by organizations (Ashton, Hopper & Scapens, 1995). However, Sunarni (2013) reports that management accounting practices has been criticized. One of the most popular criticisms of management accounting has been that its traditional tools such as standard costing, variance analysis, budgeting, and cost volume profit analysis merely focus on internal process rather than dealing with external problems such as managing the competition, generating customer value and creating competitive advantages and are no longer adequate to today's manufacturing

companies (Kaplan, 1984, 1986; Johnson & Kaplan, 1987; Cooper & Kaplan, 1991; Ashton *et al.*, 1995).

Advanced management accounting practices have thus been developed in recent years. Yazdifar and Tsamenyi (2005) had earlier stated that there were a flurry of books and articles aimed at developing the new (advanced) management accounting techniques. The new management accounting techniques include activity based costing, target costing, kaizen costing, balance scorecard and others. Abdel-Kader and Luther (2006) point out that the most notable innovative management accounting techniques are activity based techniques, strategic management accounting and the balance scorecard.

However, Uyar (2010) noted that although organizations still consider traditional management accounting tools to be important, new management accounting practices such as transfer pricing and strategic planning are seen to be less important than traditional practices. Uyar (2010) went on to proclaim that the most significant three management accounting practices are planning and control, budgeting, and cost-volume-profit analysis.

The varieties of management accounting practices adopted by organizations have been classified into various categories. Chenhall and Langfield-Smith (1998), Sulaiman *et al* (2004) and Xiao *et al* (2007) separate out the various management accounting practices into Conventional Management Accounting Practices (CMAPs) and Strategic Management Accounting Practices. Others categorize them into traditional and advanced.

Altogether, the management accounting practices followed in organizations include: Total quality management (TQM), activity based

costing (ABC), budget and standard costing, cost determination and financial control using budget, benchmarking and the cost of quality reporting (Adelegan, 2004; Adler *et al.*, 2000; Chan, 2002; Rahman, Tew& Omar, 2002; Mahfar& Omar, 2004; Nishimura, 2002; Omar, Rahman&Abidin, 2002; Waldron, 2005).

### **Benefits of Management Accounting Practices**

Organizations adopt various management accounting practices in order to benefit from them, and it is obvious that this has been the driving force behind the several evolutionary stages that management accounting has gone through (Kader & Luther, 2004). Horngren *et al.*, (2009) claims that it is recognized that management accounting practices are important to the success of the organization. According to Sunarni (2013), the main purpose of accounting information is to help users make decisions. Mahfar and Omar (2004) also remark that it is through management accounting that the managers get the tools to perform their functions. Hilton and Platt (2011) suggest that this is the primary purpose of management accounting in the organization, and it is achieved through by collecting, processing, and communicating information.

Good management accounting information, according to Ashton, Hopper and Scapens (1991), has three attributes: technical, behavioral and cultural. All these attributes provide certain benefits to the organization. In terms of the technical attribute, it improves the understanding of the measured phenomena and gives important for making strategic decisions. With respect to the behavioral attribute, it promotes actions that are in agreement with the strategic objectives of an organization. The cultural aspect encourages and/or



generates a set of common cultural beliefs, values and mindsets within an organization (Ashton *et al.*, 1991).

As stipulated by the Chartered Institute of Management Accountants (UK), management accounting proves to be beneficial to organizations with respect to the following: formulating business strategy; planning and controlling activities; decision-making; efficient resource usage; performance improvement and value enhancement.

As it has been seen from literature, management accounting offers several benefits to organizations, and thus, this study follows the literature to operationalize the benefits of management accounting practices through the following dimensions: Planning the future strategies, tactics and operations; Controlling current activities; Measuring and evaluating performance; Optimizing the use of firms resources; Reducing subjectivity in the decision making process; and Improving internal and external communication (CIMA-UK, n.d.)

### **Determinants of Management Accounting Practices**

The sensitivity of management accounting to all businesses requires that organizations always endeavor to determine and establish a particular management accounting system that best fits the ever-changing business environment (Burns *et al.*, 1999). Existing literatures on management accounting have shown that several factors determine the choice of management accounting practiced by organizations. These determinants have been categorized as internal and external or environmental, technological and business strategy (Allahyari&Ramazani, 2011; Burns &Scapens 2000;

McWatters, Morse & Zimmerman, 2001; Shields, 1997; Waweru, Hoque&Uliana, 2005).

Drawing attention to the changes in the business environment, Waweru, Hoque and Uliana (2005) remarked that several accounting literatures suggest that the environment within which management accounting is practiced certainly appears to have changed with advanced information technology, highly competitive environments, and economic recession. The rapid changes of business environment recently into global, competitive and turbulence business environment significantly impact any type of corporation, both manufacturing and non-manufacturing company, big, medium or small company and either profit oriented or non-profit company (Yazdifar&Tsamenyi, 2005). According to Gichaaga (2014), various factors influence the changes in management accounting practices in organizations. McWatters, Morse and Zimmerman (2001) explain that globalization, customer needs, and technological change are the three main forces that cause organizations to change.

As an important part of any organization, accounting staff happens to be an internal factor that determines the choice of management accounting practices. According to Hilton and Platt (2011), management accountants are important strategic partners in an organization's domestic and international management teams.

Another internal factor that influences the choice of management accounting practices is the role of owners or managers. Hilton (2000) points this out by asserting that the managers must specify a major part of their

working time to access, evaluate and interpret the changes and management decision making process. Allahyari and Ramazani (2011) also affirm that manufacturing managers of firms are under pressure to discover ways to balance costs cutting and quality improvement by considering profitability.

This study aims at ascertaining the factors that influence the choice of management accounting practices among manufacturing firms in the Kumasi metropolis. To achieve this aim, the study employs the following as the dimensions of the determinants of management accounting practices: market competition; accounting staff; owner/management participation; changes in technology.

### **Manufacturing Sector in Ghana**

Ghana rigorously adopted industrialisation policy immediately after independent with the popular import substitution policy. One of the key elements of the industrialisation is the manufacturing sector. Per the Ghana Statistical Service Reports, manufacturing sector includes firms within the industrial sector other than mining, quarry and oil (GSS, 2014). In the study conducted on the manufacturing sector, Davies and Karr (2015) defines the manufacturing sector to include Food & Beverages, Textiles, garments & footwear, Wood & furniture , Machinery & metal and Others other than the mining, quarry and oil sector.

The industrialisation policy for which the manufacturing sector was the mainstay chalked a lot of successes as the manufacturing sector alone contributed more than a tenth of the Ghana's gross domestic product up to the year 1990. Even in the 1970s, the contribution of the manufacturing sector

alone to GDP was 14% (Obedi, 2016). During those periods, manufacturing sector was considered as the main driver of the Ghana's industrialisation policy and also a major contributor to economic growth and development.

The traditional contribution of more than a tenth of Ghanaian output by the manufacturing sector is currently becoming history due to continuous declining in the current decades. Teal, Habyarimana, Thiam, and Turner (2006) have documented the lacklustre performance of manufacturing sectors during the 1990s and early 2000s. The situation has not seen major arrest even in decade after 2000. The manufacturing sector has been growing by 3.3 per cent, while other industrial sectors, such as mining, water production and construction have grown by 9.1 per cent on average between 2003 and 2013 (Davies & Karr, 2015). The relative share of the contribution of the manufacturing to GDP has declined, from about 10% in 1990 to 6.9% in 2012 and 2013. Most of this decline seems to have happened after 2007 according to Davies and Karr (2015).

The Association of Ghana Industries (AGI) has been decrying poor performance of the manufacturing sector of Ghana as the sector continues to shrink. The AGI has expressed concern that Ghana is on the verge of losing its industrial base (AGI, 2013). This was echoed when the manufacturing sector recorded an unprecedented -8% growth rate in 2015 (Obedi, 2016). According to Association of Ghana Industries (AGI) (2013), some of the causes of the poor performance include competition, continuous technological challenges, poor power stability and cost of business.

These challenges in the manufacturing sector have caused a lot of the players or firms within the sector to fold-up. Research has shown that the exit

rates of the five most concentrated cities for the manufacturing firms have increased. For instance, the exit rates as at the end of 2013 are 21.4% for Accra, 17.4% for Kumasi, 21.9% for Sekondi-Tarkoradi and 33.3% for Cape Coast (Davies & Karr, 2015). It can be observed that it is Kumasi that has the least exit rate. It is therefore important to assess the management accounting practices of the manufacturing firms in Kumasi so that the lessons can be a spill over to other parts of Ghana

### **Organizational Performance**

According to Richard, Devinney, Yip, and Johnson (2009), organizational performance can be categorized into the following three specific areas of firm outcomes: (1) financial performance (profits, return on assets, return on investment, etc.); (2) market performance (sales, market share, etc.); and (3) shareholder return (total shareholder return, economic value added, etc.).

From the theoretical discussions, the contingency theory that maintains organizational performance tends to be dependent upon the existence of fit between the use of organizational systems and the situational factors. (Baines & Langfield-Smith, 2003; Chenhall & Morris, 1986; Haldma & Laats, 2002; Hoque, 2004; Hyvönen, 2007). Langfield-Smith (1997) provides evidence that a good match between organization's environment, strategy and internal structures, and MAS may result in high organizational performance. As discussed previously, in contingency management accounting research, the fit of the relationship between the use of MAS and contextual variable is expected to have an influence on organizational performance. However, this

has not been tested in previous management accounting change research (Baines &Langfield-Smith, 2003; Libby & Waterhouse, 1996).

There is strong empirical support for the association between management accounting practices and performance, with an increased use of non-financial information (Baines &Langfield-Smith 2003; Chenhall&Langfield-Smith, 1998b; Perera et al., 1997; Sim&Killaough, 1998). For example, Chenhall and Langfield-Smith (1998) point out that a greater use of advanced management accounting practices, such as quality improvement programs, benchmarking and activity based management, in firms that placed a strong emphasis on product differentiation strategies, ultimately results in high performance. Baines and Langfield-Smith (2003) also suggest that a greater reliance on non-financial accounting information improves organizational performance.

As presented earlier, performance may be an antecedent or an outcome factor of management accounting and organizational change. Prior studies show that there may be a link between performance and change. Low financial performance is said to be one of the reasons for the firm to change its management accounting and internal organizational factors to improve performance (Granlund, 2001; Laitinen, 2006). Laitinen (2006) supports this view, as he suggests that large changes in MAS may be associated with good financial performance. Those organizations which implement new MAS expect to improve their decision making or firm performance, thus, it is important to extend this matter to management accounting research.

## **Measurement of Management Accounting Practices and Organizational Performance**

In the study of the effects of management accounting practices on financial performance of manufacturing companies in Kenya, Gichaaga (2014) used a five -point Likert scale questionnaire featuring Costing System, Budgeting, Performance Evaluation, Information for decision making and strategic analysis as the dimensions of management accounting practices. There were seven indicators under costing system, seven indicators under budgeting, six indicators under performance evaluation, ten indicators under information for decision making, and eight indicators under strategic analysis. For comprehensiveness, this study adopts Gichaana's (2014) approach.

According to Hoque (2005), traditional performance measures are unable to satisfactorily reflect firm performance affected by today's changing business environment. Prior to Hoque (2005), Hoque, Mia, and Alam (2001), claimed that traditional measures which focus mainly on financial criteria such as return on investment or net earnings are narrow in focus, historical in nature and in many cases are incomplete.

Although Hoque (2005) used non-financial performance measures in evaluating organizational performance operating in an uncertain environment, Hoque *et al.* (2001) suggested earlier that in today's environment of computerized manufacturing and fierce competition, organizations need a multidimensional performance measurement system that should provide continuous signals as to what is most important in their day-to-day activities and where efforts must be directed. Thus, following Hoque *et al.* (2001), this

study uses multiple performance measures comprising both financial and non-financial measures to measure performance in manufacturing companies because the use of traditional performance measurement alone is not enough to measure performance for organizations operating in highly competitive and advanced technology environments. Thus performance indicators used in this study include level of productivity, product quality, number of deliveries on time, sales growth rate, operating profit growth rate and cash flow growth rate.

### **Lessons Learnt and Knowledge Gap**

The literature review has provided lessons that will serve as a guide towards the achievement of the objectives of this research. The theoretical framework has provided a firm foundation upon which the relationship between management accounting practices and organizational performance can be studied. The empirical and conceptual review serves as the basis for comparison of the study findings, choice of the research design, analysis, and the focus of the study.

From the literature review, it has been observed that globalization has changed the environment surrounding organizations operating in developing countries, with an increase in uncertainty, intensified industry competition and advanced technology (Allahyari&Ramazani 2011). These have resulted in the need for the firm to reconsider its existing organizational design and strategies. The institutional theory which proposed that organizations change either in a gradual-incremental manner or a revolutionary-radical manner revealed that organizations can successfully change irrespective of their structural arrangement provided they implement adaptive strategies of either radical or incremental change to result in process innovation changes (Sisaye, 2003).



Irrespective of the strength of the strength of the institutional theory in unifying the environment and management (Gathungu&Owanda, 2012) theory has been criticized that it puts an huge amount of restraint on management to conform to requirements or rules within its own environment which could be damaging to the firm (Scott, 2001). Another criticism of the institutional theory of organizations is that it creates “cookie-cutter” organizations (Scott, 2001).

The contingency theory, which proposes that there is no universally acceptable model of the organization that explains the diversity of organizational systems design indicated that management accounting, if organizations implement MAS that suit their organizational and environmental factors, they are likely to perform better (Chenhall, 2003; Otley, 1980). It suggested the fit between MAS and its contextual variables are the most important determinant of performance (Jermias&Gani, 2002). Thus, as a firm strives to better fit with its environment, the organizational performance also improves. However this suggestion by the contingency has been criticized in that the contingencies within the environments of the firm are not static but also keep changing with time and that companies may never attain the desired fit (Donaldson, 2006).

It was revealed by the conceptual review that management accounting has evolved over the years, and that researchers have categorized the various management accounting practices into traditional, advanced strategic (Chenhall&Langfield-Smith, 1998; Sulaiman et al., 2004; Xiao et al., 2007). Under these categories, today’s organizations either choose to adopt total quality management (TQM), activity based costing (ABC), budget and

standard costing, cost determination and financial control using budget, benchmarking and the cost of quality reporting (Adelegan, 2004; Adler *et al.*, 2000; Chan, 2002; Abdul Rahman, Tew& Omar, 2002; Mahfar& Omar, 2004; Nishimura, 2002; Omar, Rahman&Abidin, 2002; Waldron, 2005).

From the empirical review it was learnt that prior research works in management accounting have examined the various relationships between the environment, organizational and management accounting system. Most of the studies have been qualitative in nature, just investigating which management accounting practices adopted by companies (Alder *et al.*, 2000, Anand *et al.*, 2004; Abdel-Kader& Luther, 2006). Others too adopted a quantitative approach, examining the relationship between various management accounting practices and organizational performance (Liqat, 2006; Waweru, 1999). However, mixed results were obtained for these quantitative studies. While Waweru (1999) found a significant positive relationship between the adopted management accounting practices and organizational performance, Liqat (2006) found no significant relationship. The differences in the findings could either be attributed to the difference in geographical and economic situation of the study settings or the different management accounting practices considered.

Furthermore, it was noticed that most of the studies used questionnaires with a 5-point Likert scale as the data collection instrument (Alder *et al.*, 2000, Anand *et al.*, 2000; Abdel-Kader & Luther, 2006; Liquat, 2006). Additionally, while some of the studies were conducted on firms with similar characteristics (Abdel-Kader & Luther, 2006; Vorkuka&Lummus, 2001),

other studies focused on companies with diverse features (Anand *et al.*, 2004; Waweru, 1999).

Review of the empirical literature revealed that most of the studies in this area have been conducted in developed countries, and a few in the African setting. However, there has not been any Ghanaian study that examines the relationship between the various management accounting practices adopted by Ghanaian companies and organizational performance. This study therefore intends to fill this gap by assessing the management accounting practices adopted by manufacturing firms within the Kumasi metropolis and the relationship between these management accounting practices and organizational performance.

### **Conceptual Framework**

The review of the conceptual issues and variables of the study revealed that management accounting practices could be classified into the: dimensions costing systems; budgeting systems; performance evaluation systems; and strategic management accounting. The determinants or agents that influence the choice of management accounting have also been operationalized as market competition, accounting staff, owner/management participation and changes in technology.

In addition, the conceptual review indicated that the benefits attained from management accounting practices fall under the following dimensions: Planning the future strategies, tactics and operations; Controlling current activities; Measuring and evaluating performance; Optimizing the use of firms resources; Reducing subjectivity in the decision making process; and

Improving internal and external communication. Finally, the review unveiled that the indicators of organizational performance include the following: level of productivity, product quality, number of deliveries on time, sales growth rate, operating profit growth rate and cash flow growth rate. Based on the literature review the links between the key variables in the study have been diagrammatically represented in the conceptual framework in figure 1.

As depicted in the conceptual framework, organizations choose to adopt various management accounting practices. However, the choice of particular management accounting practices is influenced by certain agents or determinants such as accounting staff, owner or management participation, market competition and technology. These determinants are theoretical constructs developed from both the institutional theory and the contingency theory. The formal structure of the first dichotomous assumption of the institutional theory posits that key personnel, owner or management participation, market competition and technological change affects the adoption of management accounting practices. Following this theoretical postulation, the study formulates alternate hypothesis as:

H<sub>a</sub>: accounting staff, owner or management participation, market competition and technological change significantly determines management accounting practices

This hypothesis has been conceptualised in the Figure 1 indicating how the concepts affect the MAP. In addition, it is learnt from the literature the revolutionary versus evolutionary change, and regressive versus progressive change assumptions there is value creation benefits associated with the

adoption of management accounting practices. These theoretical benefits have been conceptualised to include reduction in subjectivity in the decision making process, improvement in communication, planning future strategies, tactics and operations, and many more are attained. These are also reflected in the conceptual framework Figure 1 below.

Furthermore, in the conceptual framework below, it can be observed that there is a causal relationship depicting between the level of management accounting practice and organisational performance: where the level of management accounting practice denotes the independent variable and organisational performance indicating dependent variable. This follows the theoretical contribution of Burns and Scapens (2000) as reviewed in under the institutional theory. Burns and Scapens (2000) relied on the first dichotomous assumption to conceptualise that the formal versus informal change dichotomy is the most appropriate for explaining the relationship between management accounting and organizational change including performance.

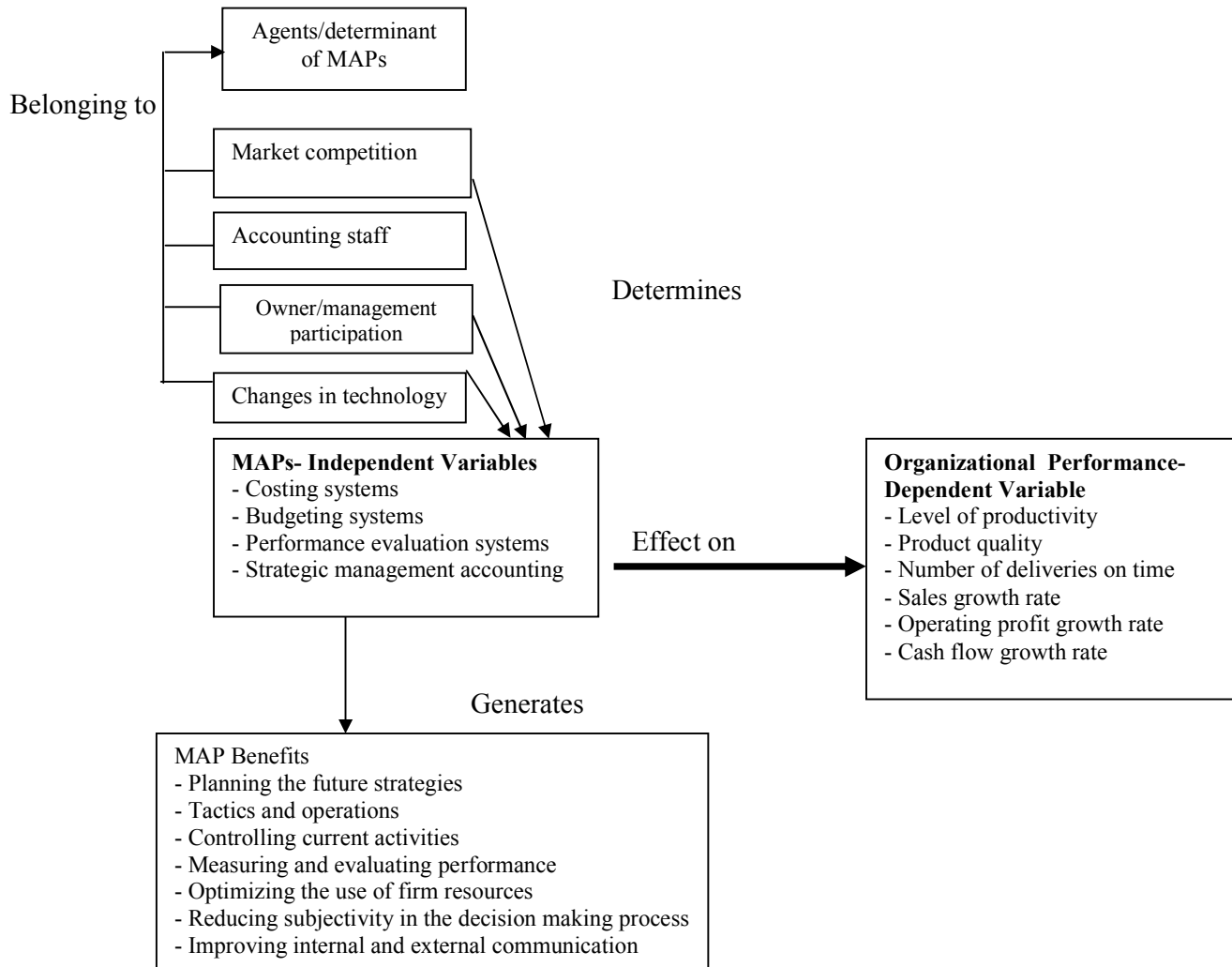


Figure 1: Management accounting practices and organizational performance

Source: Author's construct, 2015

## **CHAPTER THREE**

### **METHODOLOGY**

#### **Introduction**

This chapter describes the research design and methodology used to collect and analyse the data for the study.

#### **Research Paradigm and Philosophy**

To ensure a strong research design, researchers usually choose a research paradigm or philosophy that is congruent with their beliefs about the nature of reality (Betts, 2011). Paradigm or philosophy refers to a system of ideas, or world view, used by a community of researchers to generate knowledge. It is a set of assumptions, research strategies and criteria for rigour that are shared, even taken for granted by that community.

For the purpose of this study, due to the quantitative design in its nature, it is guided by the positivity research paradigm. According to Feilzer (2010) positivity involves hypothesis testing to obtain “objective” truth. It is also used to predict what may happen at a future date. In most literature on management accounting and firm performance, it has been realized that when techniques and proper management practices sound are followed firms and for that matter manufacturing firms would increase performance. The positivity paradigm helps to establish the validity of this assertion in the Kumasi metropolis

## Research Design

A research design is very important in research as it helps to provide the basic directions for carrying out a research project. Easterby *et al.* (2002), Collis and Hussey (2003), and Creswell (2003) explain that a researcher must determine the research design at an early stage of the research, as it has a central role to play on research activities and has significant effects on the whole research process. In particular, a research design should provide relevant information that will most efficiently and effectively address the research questions or hypotheses (Hair *et al.*, 2007).

A cross sectional survey method was adopted as the main methodology for the current research. A survey is defined differently by many scholars, but these definitions are quite the same. For example, Bryman (2001) defined the survey as quantitative research which tends to bring out a static picture of social life. Survey was designed to provide information about the degree to which there was a consensus among members of the sample about certain circumstances. Thus, the central issue in the survey method is more on how it is deployed rather than with the method itself (Van der Stede *et al.*, 2007).

In survey research, which contains a cross-sectional design, data is collected predominantly by questionnaires or by interviews on more than one case at a single point in time to gather quantitative or qualitative data in connection with two or more variables, which are then examined to detect patterns of association (Bryman & Bell, 2007). In the current research data was gathered on the Management accounting practices, factors influencing the adoption of such practices and performance of manufacturing firms over the past three years, thus between 2012 and 2014. Also, patterns of association



were also detected between management accounting practices and performance and also between management accounting practices and its determinants.

The aim of the current study is to investigate the Management accounting practices and performance of manufacturing firms in the Kumasi Metropolis over the last three years. A cross sectional design was chosen in this respect. One major reason for choosing a cross sectional design is that, it is impossible for a repeated survey to be conducted in each of the three years. Therefore, to deal with this limitation, a one-time survey is used. Another reason for choosing a cross sectional design over a longitudinal design is that, repeated surveys are reported as subject to increasing non-response over time, and result in incomplete longitudinal data (Van der Stedeet *al.*, 2007).

An examination of management accounting literature revealed that case study was adopted as a common research method. However, using contingency theory, this study aims to obtain a wider investigation of management accounting, organizational change and performance. To achieve this, the survey method is seen as more appropriate in relation to other methods, such as case and field study, which relies more on context and process. This choice is supported by Van der Stedeet *al.* (2007), who pointed out that the survey is the common method used for theory testing in management accounting research.

## **Study Area**

The research concentrates only on the manufacturing sector particular firms in Kumasi metropolis. The manufacturing sector was chosen because of the poor performance in recent years which according to the Association of Ghana Industry is caused by factors that can be addressed by effective management accounting practices (AGI, 2013). In this study, the manufacturing sector is defined to include Food & Beverages, Textiles, garments & footwear, Wood & furniture , Machinery & metal and Others other than the mining, quarry and oil sector (Davies & Karr, 2015).

Kumasi metropolis is selected as the study area due to its relatively low liquidation or exit rate of the manufacturing firms in comparison with other cities such as Accra, Sekondi-Takoradi and Cap Coast (Davies & Karr, 2015). Thus, despite the challenges face by the manufacturing firms in Ghana, firms in Kumasi have high survival rate. It is therefore important to assess how management accounting is practiced among these firms so as to ascertain valuable lessons for spill over recommendations.

## **Population**

The population for the study is therefore manufacturing firms in the Kumasi Metropolis. The total population of the manufacturing firms is 3374 (Davies & Karr, 2015). These include Food & Beverages, Textiles, garments & footwear, Wood & furniture , Machinery & metal and Others other than the mining, quarry and oil sector. However, the target population for this research is manufacturing firms registered with the Association of Ghana Industries, Kumasi.

## **Sampling Procedures**

Although, the survey by Davies and Karr (2015) revealed a population of 3374, the study concentrates on only firms registered with Association of Ghana Industries. The population registered with AGI is 150 as at 2014. Since the target population is relatively small, the entire population, which consists of 150 manufacturing firms registered with the Association of Ghana Industries, was targeted as the sample for this research. The main reason for choosing the entire population is to ensure that the sample is representative and not biased.

The list of manufacturing companies in Kumasi was taken from the Association of Ghana Industries (AGI). Sampling is not appropriate for this study for two basic reasons. First and foremost, the result from a census study is relatively more reliable than results from a sample. Secondly, a census study is adopted because coverage of the entire population is feasible. The participants selected for the study were chief accountants and head of finance of the manufacturing firms within the study frame. These staff were selected due to their expertise in management accounting practices.

## **Sources of Data**

In general, there are two main sources of data that can be used in a research. These are secondary data and primary data. Secondary data is that type of data which already exist and is produced or collected by others for some other purposes and can be found in various sources. These sources include books, journals, published statistics, annual reports, films, and government surveys. Primary data refers to original data collected by the researcher to meet the research objectives, including survey and experimental

data (Collis & Hussey, 2003). The data used or collected in the current research is primary data.

### **Data Collection Method**

There are different types of data collection methods. These may include but not limited to questionnaire administration and interview administration.

The current research adopts the questionnaire administration method, using self-administered questionnaires. The selection of this method is based on the fact that firstly, collecting data regarding accounting and management information is difficult. Therefore the use of self-administered questionnaires was chosen since this may facilitate the process and make the data collection process easier. Also the questionnaire administration method of data collection is chosen because it is the most common method of data collection in survey (Brownell, 1995). A structured self-administered questionnaire is adopted for this study.

### **Data Collection Instrument**

The population for this study was manufacturing firms in the Kumasi Metropolis registered with the Association of Ghana Industries. Addresses and contact numbers of the manufacturing firms were obtained from AGI. Questionnaire was used as the data collection instrument for this study. The owners or managers and particularly the head of the accounts or finance section of manufacturing firms with a separate unit for accounting or finance, were the main respondents for the study. These respondents were given the questionnaires to fill and return later. Thus, questionnaire is the data collection instrument used for the data collection.

The questionnaire was structured into four sections. Section one solicits general or background information about respondents. Information gathered in this section includes the type of business, number of years of operation, number of employees, and ownership structure of the business. In this first section of the questionnaire, data was also collected on the annual sales turnover of firm. This information was to help the researcher determine the size of the respondent firms.

Section two solicits information on the adoption rate of management accounting practices. This section is made up of four parts, Part A to D, with each part discussing a particular management accounting system with several techniques. Part A asks respondents to answer questions in relation to the costing system and as a result the costing practices adopted by firms. Part B of section two is on the budgeting system of respondent firms. It asks respondents to indicate the types of budgets that are prepared and how often budgets are prepared in respondent firms. Part C is about performance evaluation and respondents are asked to tick the performance evaluation practices adopted by them. The performance evaluation practices were grouped into financial and non-financial measures. The last Part of the section two, Part D, solicits information of strategic Management accounting practices adopted by manufacturing firms under study.

Section C of the questionnaire asks respondent firms to indicate the level of benefits derived from the adoption of Management accounting practices or the usefulness of such practices. Section D focuses on the factors that influence the adoption or use of management accounting practices. These factors are market competition, accounting staff, owner or management

participation in the development of management accounting practices and the level of manufacturing technology in place. This section is also divided in four parts and each part discusses a factor that influences the adoption of management accounting practices. The final section of the questionnaire solicits information on the performance indicators of firms.

### **Pre-testing of Instruments**

Although the questionnaire was built in stages and underwent numerous revisions before a final draft was produced, there was the need to first pre-test the final draft to establish whether further improvements were needed before its full distribution. It is always advisable to pilot the questionnaire on a small number of people before using it for real. This enables the researcher to check that items are easily understood and that there are no noticeable problems to do with length, sequencing of questions and sensitive items (Easterby-Smith *et al.*, 2002).

Out of 150 companies, 10 were chosen for pilot study. These companies were selected from Asokwa industrial area. This region is selected due to the fact that this is the most industrialised area in Kumasi. Also, this area is deemed suitable because it possesses similar characteristics as the target population. Another reason for choosing this area for pilot study is that both the target population and the pilot study area are in the same region. A small sample, which consisted of 10 manufacturing firms were selected and the respondents requested to respond to the questions on the questionnaire.

Response rates for pilot study also gave a guideline in determining the response from the population likely to be required for the actual survey (De

Vaus, 2001; Collis & Hussey, 2003; Sekaran, 2003; Saunders et al., 2007). The researcher took notes for comments of the respondents on clarity, weaknesses, ambiguities, and misleading and/or repeated inadequacies in all aspects of the questionnaire (Saunders et al., 2007). The questionnaire was revised accordingly before the final draft was produced for the main study.

Useful feedback was gained from the respondents, who commented that the questionnaire was clear, understandable and easy to complete. In addition they indicated that the length of the questionnaire was suitable and not onerous. After, considering all the suggestions received as a result of these procedures, a few modifications were made to produce the final draft of the questionnaire.

### **Data Collection Procedure**

The 150 selected manufacturing firms were visited by the researcher and three staff of the Association of Ghana Industries, Kumasi. The respondents were told that the exercise was for academic purposes and that confidentiality was assured in order to motivate them to give their responses without reservation. The researcher used three weeks to administer the questionnaire.

### **Measurement of Variables**

The variables of the current study will be measured by the use of scales. The binary, nominal and the ordinal scale will be utilized in designing the questionnaire. The data analysis for this scale is restricted mostly to counts of the number of responses in each category, calculation of the mode percentage for a particular question (Hair *et al.*, 2007), and the use of the regression statistic to establish relationships among variables.

The data collection instrument, questionnaire, was divided into five sections. Responses to questions in these sections were measured using scales. The first section collected data on the profile or general information of respondent firms. Nominal scale was used to measure the profile of the firms and also for the type of industrial sector of firms. Nominal scales help to identify and classify some characteristics of the respondents (Hair *et al.*, 2007) and allow the researcher to qualitatively distinguish groups by categorizing them into mutually exclusive and collectively exhaustive sets (Sekaran, 2004).

The second section of the questionnaire also collected data on the use of management accounting practices. Binary scale was used to measure responses to questions in this section of the questionnaire. A binary scale is scale that has two categories, one for cases that possess a characteristic and one for those that do not (Kent, 2001). Examples of this type of scale are poverty or not in poverty; employed and unemployed; married or not married; and responses to these types of questions are normally 'yes' or 'no'. Binary scales which are sometimes called dichotomies have interesting statistical properties not possessed by scales which have three or more categories (Kent, 2001). This scale will be utilized for the general 'yes' or 'no' questions about whether the firm uses each particular management accounting practice or not.

The roles, benefits or usefulness of Management accounting practices are also covered in questionnaire. Data collected in this section is measured by the use of the ordinal scale. The ordinal scale is used to measure concepts such as attitudes, perception, feelings, opinions and values through the use of rating scales (Hair *et al.*, 2007) and will help to classify in order of the magnitude of the differences in each variable (Sekaran, 2004).



The ordinal scale can be facilitated with the use of a summated rating scale or Likert scale. Summated scales often use a five-point or seven-point scale to assess the strength of agreement about a group of statements. When the scales for all the statements are summed it is referred to as a summated rating scale. When the scale is used individually it is referred to as a Likert scale (Hair *et al.*, 2007). For the purpose of the current study, a four-point likert scale is used to measure the benefits firms derive from the use of management accounting practices.

The fourth section of the questionnaire gathered information on the factors that affect the use of management accounting practices. Answers to questions in this section were also measured by the use of the ordinal scale. For the purpose of this research the four-point Likert scale was used to measure the factors which affect the extent of the use of Management accounting practices. The final section of the questionnaire asked respondents to indicate whether performance of their firms have increased or decreased, significantly or not, as a result of adoption and implementation of management accounting practices. The measurement scale for performance is also ordinal scale. A four-point likert is used to gather information relating to performance by considering six indicators of performance.

The use of a four-point scale is aligned with previous studies in the management accounting area (Abdel-Kader & Luther 2006; Adler, Everett & Waldron 2000). The use of a four-point Likert scale is not only consistent with the previous studies, but also provides a shorter scale to help respondents to complete the questionnaire. According to Hair *et al.* (2007), the desire for a higher level of precision must be balanced with the demands placed on the

respondents. Respondents must be reasonably well educated to process the information associated with a larger number of categories. Also, respondents exposed to scaling questions less often, can more easily respond to scales with fewer categories. The use of categories in Likert scales will probably help respondents understand the information required and thereby increase the response rate.

In the current study, the respondents were requested to score from one to four (one to mean very low score and four to indicate very high score) their perceptions about the level of performance in the firm. Performance has also been measured using six indicators. These are, level of productivity, product quality, number of deliveries on time, sales growth rate, operating profit growth rate and cash flow growth rate.

### **Data Analysis Procedure**

The data collected in this study is be used to generate descriptive statistics, and the data relating to the dependent and independent variables is be used for hypotheses testing using regression analysis. The descriptive measures that the study proposed to use are frequency distributions, measures of central tendency and measures of dispersion. Frequency distribution display the number of responses associated with each value of a variable in the questionnaire. Measures of central tendency locate the centre of the distribution of the respective data using measures of the mean, median and mode. A measure of dispersion such as standard deviation is used to describe the tendency of data to depart from the central tendency. The descriptive approach therefore helps to answer the first four research objectives.

To test the two hypotheses of this study, standard multiple regression analysis approach will be employed to investigate the simultaneous effect of the relationship between all independent variables and the dependent variable. The results of these tests are presented in in the next chapter.

### **Statistical Tool and Method**

The SPSS statistical package version 17 was used as the statistical tool for the current research. The statistical method used is the standard multiple regression method. This method was chosen because, in contrast to correlation analysis which does not determine which of the variables is the independent and which is the dependent, regression analysis is used to identify the impact of independent variables on the dependent variable.

While in simple regression analysis a single independent variable is used to predict a single dependent variable, multiple regression analysis uses several independent variables to predict a single dependent variable. It also identifies how much of the variance in the dependent variable is explained by theorising simultaneously the influence of several independent variables. In the current research, the independent variables will be tested together, making standard multiple regression method appropriate for the current research.

Another reason why standard multiple regression analysis was employed is that, it is regarded as the most widely applied data analysis technique for assessing the relationship between two or more variables (Hair et al.2007). Since all the variables in this research are measured with ordinal and interval data and the dependent variable is metric, standard multiple regression seems to be appropriate.

In testing the research hypothesis of the current research, standard multiple regression is used to explain the variance in the dependent variable (the adoption rate of management accounting practices) by a set of independent variables (the factors influencing the adoption of management accounting practices) and also the variance between performance and the adoption of management accounting practices.

### **Model Specification**

Following the discussions in chapter one of the current study, two hypotheses are tested. To achieve this objective, the standard multiple regression model was used. This is deemed appropriate because in the current study, the independent variables will be tested together. The generic model can thus be stated as:

$$Y = \alpha + \sum \beta x + \varepsilon \quad (1)$$

Where;

Y is the dependent variable

$\alpha$  is the constant (that is, all those variables not considered in the current study but which can result in a change in the dependent variable, Y)

$\beta$  is the coefficient of x

x refers to the independent variables  $\varepsilon$

is the error term

Having stated the generic model, the equation can be operationalised to solve the hypothesis as follows:

Hypothesis 1: There is a significant effect of Market competition (MC), characteristics of the accounting staff (CAS), owner/manager participation (OMP) and changes in technology (CIT) on the use of management accounting practices (MAPs).

With these variables in view, the regression model can be rewritten as:

$$MAPs = \alpha + \beta_1(MC) + \beta_2(CAS) + \beta_3(OMP) + \beta_4(CIT) + \varepsilon \quad (2)$$

From the above equation;

The dependent variable is management accounting practices (MAPs).

The independent variables are:

Market Competition (MC)

Characteristics of Accounting Staff (CAS)

Owner/Manager Participation (OMP)

Changes in Technology (CIT)

The coefficients of the independent variables are used to assess the extent of the determinants. It is expected that these independent variables would have positive effect on the adoption of management accounting practices.

Hypothesis 2: There is a significant effect of management accounting practices (costing system (CS), level of budgetary system (BS), financial performance evaluation system (PESf), non-financial

performance evaluation system (PESnf) and strategic management accounting (SMA) adoption on performance (Perf)).

With these variables in view, the regression model can be rewritten as:

$$Perf = \alpha + \beta_1(CS) + \beta_2(BS) + \beta_3(PESf) + \beta_4(PESnf) + \beta_5(SMA) + \varepsilon \quad (3)$$

From the above equation;

The dependent variable is Performance (Perf).

The independent variables are:

Costing System (CS)

Level of Budgetary System (BS)

Financial Performance Evaluation System (PESf)

Non-Financial Performance Evaluation System (PESnf)

Strategic Management Accounting (SMA)

The coefficients of these independent variables would be the bases for measuring how management accounting practices influence the level of organisational performance. The aprior expectation of the relationship are that costing system (CS), level of budgetary system (BS), strategic management accounting (SMA) and non-financial evaluation would have significant positive influence on the level of organisational performance of manufacturing firms in Kumasi.

### **Instrument Validity and Reliability Test**

Prior to analysing the results from the study, it is important to assess whether the data used to produce those findings are reliable and valid. Therefore the instruments used to collect data for any research is as important as the research itself. In view of this, the study scrutinised the questionnaire used for the data collection for its validity and reliability. The validity of questions used for data collection was enhanced through a thorough literature review. The study designed its questionnaire from the already existing relevant variables and questionnaires in the literature. Using the already existing variables and questions minimise the possibility of collecting inappropriate data.

Having determined the extent of validity, the study subsequently assessed the reliability of the data used. This assessment was done through the reliability test. The reliability test examined the extent to which the variables, instrument, and the questions used to measure the variables are reliable for the study. The study used Cronbach Alpha to assess the extent of the reliability. Pallant (2005) opined that Cronbach Alpha is one of the most frequent and widely method for testing reliability. The study conducted the reliability test through SPSS version 17. The Cronbach Alpha test results are presented in Table 1.

**Table 1: Reliability Test of the Data**

Study variables	Cronbach Alpha
Adoption of management accounting practices	0.657
Benefits of management accounting practices	0.702
Determinants of management accounting practices	0.691
Organizational performance	0.722
Overall statistic	0.734

Source: Field work (2015)

From Table 1, the Cronbach Alpha for each of the sections can be observed. The Cronbach Alpha statistics for management accounting practices, benefits of management accounting practices, determinants of management accounting practices and performance of firms are 0.657, 0.702, 0.691 and 0.722 respectively. The rule of the thumb on the acceptable level of Cronbach Alpha for a reliable result is 0.70 or higher (Pallant, 2005). Drawing from the thumb rule, it is evidenced that the data used in this study are reliable for conclusions to be drawn. All the reliability test statistics in this study are meet the rule of the thumb criterion and even some exceeds the 0.70 threshold. This implies that all the questions issued to the respondents were more reliable and were able to measure what they purport to measure. Besides the sectional Cronbach alpha analysis, the study also presents the overall score for all the questions used and the statistic was 0.734 which is also greater than the 0.70 point.



## **CHAPTER FOUR**

### **RESULTS AND DISCUSSION**

#### **Introduction**

This chapter presents the analyses of the results and discussions in relation to the specific objectives as stated in chapter one. Comparison of the study results with the literature is discussed within the context of both theoretical arguments and empirical review. In addition, the implications of the results are discussed in this chapter giving room for appropriate recommendations.

Specifically, the presentations are narrowed to the management accounting practices and performance of manufacturing firms in Kumasi Metropolis. The findings, their significance, comparative analysis, implications and the practical importance are discussed within the scope of the topic as operationalised by the specific research objectives.

#### **Background Information on Sampled Firms**

The study distributed 150 questionnaires to the management of manufacturing firms in the Kumasi metropolis by personal interactions or face-to-face. Out of the 150, 105 of the questionnaires received responses. Thus the response rate was 70 percent which is relatively high. It is believed that getting executive or management to respond to questionnaires are often difficult, however, the method of administration really helped in this study. The data characteristics or general information about the 105 respondents were sectorial or business analysis of firms, sales turnover and number of employees. The results are presented in Table 2.

**Table 2: Data Background of Manufacturing Firms in Kumasi Metropolis**

Variable	Frequency	Percentage (%)
Business analysis		
Textiles, furniture and paper	25	27.5
Food, water and beverage	24	26.4
Toiletries and cosmetics	13	14.3
Rubber and plastic	10	11.0
Pharmaceutical	8	8.8
Metal, machinery and equipment	6	6.6
Chemicals and chemical products	3	3.3
Engineering and electronics	2	2.2
<b>Total</b>	<b>91</b>	<b>100</b>
Annual Turnover (GH¢)		
50,000 – 100,000	17	18.7
100,001 – 500,000	2	2.2
500,001 – 1,000,000	50	54.9
1,000,001 – 10,000,000	7	7.7
10,000,001 & above	15	16.5
<b>Total</b>	<b>91</b>	<b>100</b>
0-5	11	12.1
6-10	37	40.7
11-15	23	25.3
16-20	13	14.3
21 and above	3	3.3
Non response	4	4.3
<b>Total</b>	<b>91</b>	<b>100</b>

Source: Field work (2015)

Regarding the nature of business of the manufacturing firms, the Table shows that textiles, furniture and paper firms were the dominant sector with a total firms of 25 representing 27.5 percent, followed by the food, water and beverage with the firms total of 24 (26.4 percent). Engineering & Electronics are the category of business within the manufacturing sector in Kumasi metropolis with the lowest number of firms or players. Specifically, this category has firms total of Two (2.1 percent).

Apart from the two dominating business categories, the next in line are toiletries and cosmetics (13) with a percentage of 14.3 percent of the total number of respondents, followed by rubber and plastic (10) with the percentage rate of 11.0 percent, pharmaceutical with total firms of 8 representing 8.8 percent of respondents. 6.6 percent of the respondents also indicated that they are in the metal, machinery and equipment sector. The chemical and chemical products sector had a response rate of (3) 3.3 percent.

The implication of the above is that the manufacturing sector within Kumasi metropolis is concentrated by textiles, furniture and paper firms and food, water and beverage. These two categories contribute to about 53.9 percent of all the firms in the manufacturing sector. This means that when about 91 firms within the manufacturing sector are selected, the possibility of selecting 49 of firms within textiles, furniture and paper and food, water and beverage is about 53.9 percent.

The table also shows details of turnover in relation to the sampled firms. Majority of the firms within the manufacturing sector have turnover range of Five Hundred Thousand Ghana Cedis to One Million Ghana Cedis. The firms in this range were 50 representing 54.9 percent. This is followed by those

with the turnover between between Fifty Thousand Ghana Cedis and One Hundred Thousand Ghana Cedis. This category had 17 (18.7 percent) of the firms. 15 (16.5 percent) of the sampled firms had their turnover standing over Ten Million Ghana Cedis. 7 of the firms had turnover between One Million Ghana Cedis and Ten Million Ghana Cedis representing 7.7 percent. Only 2 (2.2 percent) of the firms had turnover between One Hundred Thousand Ghana Cedis and Five Hundred Thousand Ghana Cedis.

A critical evaluation of the turnover analysis above reveals that the turnover concentration of the sampled firms is between Five Hundred Thousand Ghana Cedis to Ten Million Ghana Cedis and partly between Fifty Thousand Ghana Cedis and One Hundred Thousand Ghana Cedis. About 82 out of the 99 of the firms are concentrated within this turnover bracket. This means that almost all the firms are medium enterprises as per Ghana Revenue Authority categorisation (GRA, 2013).

From Table 2, the employees' statistics of the firms have been displayed. 37 (40.7 percent) of the firms within the samples had staff strength of between 6 and 10. Thus, the majority of the firms have employees of 6 to 10. Table shows that 23 (25.3 percent) of the respondents have 11 to 15 employees. It can be concluded that 60 (66 percent) of the respondents have 6 to 15 employees. The overall staff strength is not encouraging as the manufacturing sector is known of high rate of unskilled labour. This means that relatively the accounting staff may not be enough to promote effective management accounting systems. This deduction is supported from the fact that only 3 firms has 21 plus employees. It is also evidenced from the

employees statistics that 13 (14.3 percent) of the respondents had between 16 and 20 employees.

In sum, the statistical analysis and discussions of the background of the sampled firms used in this study have revealed that although the manufacturing firms within the Kumasi metropolis have relative large sizes, the number of persons they employ are relative few.

### **Management Accounting Practices Adopted by Manufacturing Firms**

The focus of the study is to examine management accounting practices and performance of manufacturing firms within Kumasi metropolis. To establish the relationship between management accounting practices and performance, there is the need to identify and determine the levels of these management accounting practices. The assessment of the management accounting practices enhances the understanding of the various techniques emanating from the study.

The first objective of the study therefore sought to identify the management accounting practices among manufacturing firms in Kumasi metropolis. The management accounting practices comprised four dimensions, namely; costing system, budgetary system, performance evaluation system and strategic management accounting. Each of these dimensions has further sub-dimensions and indicators as established in the literature and captured on the instrument.

The level of adoption of each indicator within the dimensions was determined independently, using a mean value of 1 to 2 with 1 to 1.59 indicating high level of adoption and 1.6 to 2 indicating low levels.

Subsequently, the grand mean is calculated for each component using the score of each indicator or sub-components under the main component. The means were developed from the 'Yes or No' responses. Since a particular firm can adopt multiples of the management accounting indicators, tabulating yes or no would not give comparable values. Therefore, the study follows the mean scale of 1 and 2 to determine the cut-off point so that those indicators or techniques with mean above 1.59 is considered relevant by the respondents. This uses similar mean scale adopted for the two and four and follows the empirical study of Dess, Lumpkin and McFarlin (2005).

The mean values which determine the level of adoption of management accounting practices were first determined for each indicator, followed by the overall mean value per each of the sub- dimensions and finally the entire sample of all indicators for the grand mean for each dimension. The details of the mean statistics and percentage of frequencies for all the indicators, sub-dimensions and dimensions have been shown on Table 3. The use of the mean scale also presents quantitative estimates for the management accounting practice to enable the causal relationship to be conducted under the specific objective three and five. Thus, the mean and the grand means represent the quantitative score estimates of the adoption of a given management accounting technique. These quantitative estimates cannot be ascertained under pure 'Yes or No' tabulation.

**Table 3: Management accounting practices of manufacturing firms in Kumasi metropolis**

<b>Management accounting dimensions</b>	<b>Indicator</b>	<b>Percentage</b>	<b>Mean</b>
Costing systems			
Product costing	Job costing	33.6	1.21
	Batch costing	30.0	1.30
	Contract costing	22.7	1.47
	Process costing	13.8	1.67
Product costing mean			1.41
Costing techniques			
	Absorption costing		1.29
	Variable costing		1.48
	Activity based costing		1.95
Costing techniques mean			1.57
Grand mean			1.48
<hr/>			
Budgetary system			
Budget types	Sales budget	26.3	1.10
	Purchase budget	24.9	1.15
	Production budget	21.6	1.27
	Cash budget	26.1	1.12
	Financial position budget	1.1	1.96
Budget types mean			1.32
Budget technique			
	Flexible budgeting	44.7	.28
	Incremental budgeting	42.4	1.31
	Static budgeting	7.6	1.88
	Zero-based budgeting	5.3	1.91
Budget technique mean			1.60
Grand mean			1.44

Source: Field work (2015)

**Con't Table 3: Management accounting practices of manufacturing firms in Kumasi metropolis**

<b>Management accounting dimensions</b>	<b>Indicator</b>	<b>Percentage</b>	<b>Mean</b>
Performance evaluation system			
Financial evaluation	Operating income	22.9	1.37
	Return on investment	10.8	1.70
	Variance analysis	0.7	1.98
	Sales growth	34.4	1.06
	Cash flow	31.2	1.14
Financial evaluation mean			1.45
Financial evaluation mean			
Non-Financial evaluation	Customers' satisfaction	49.7	1.06
	On time delivery	50.3	1.05
Non-Financial evaluation mean			1.05
Grand mean			1.34
Strategic management accounting	An analysis of costs that occur across stages of a product development	26.7	1.07
	Taking into account any strategic factors when setting price decision(example costs of installation, operation, support, maintenance and disposal)	25.6	1.11
	The systematic collection of data on competitors' price reaction, demand reaction, and market position?	24.5	1.15
	Monitoring the costs that occur across stages of product development(example costs of installation, operation, support, maintenance and disposal)	23.1	1.19
Grand mean			1.13

Source: Field work (2015)

\*Mean: 1 to 1.59 = high level of adoption and 1.6 to 2 = low level of adoption





The first dimension of management accounting practice as shown on the Table 3 is costing system. This dimension measured the extent to which manufacturing firms employ management accounting techniques in cost determination and financial controls (Adelegan, 2004; Mahfar and Omar, 2004). The purpose of this management accounting practice to decisions makers is to minimise cost of products and maximise sales revenue. As shown in Table 3, this dimension has two indicators: product costing and costing technique. The indicators for product costing as depicted from the table above are job costing, batch costing, contract costing and process costing. The statistical results of these indicators show mean values ( $\bar{X}$ ) of 1.21, 1.30, 1.47 and 1.67 for job costing, batch costing, contract costing and process costing respectively. This means that respondents generally emphasized high levels of adoption of job costing, batch costing and contract costing with insignificant level of adoption for process costing as it has mean value greater than the cut-off point of 1.59 ( $\bar{X} = 1.67$ ). The overall mean score for product costing is relatively high ( $\bar{X} = 1.41$ ) as the score is less than 1.59.

Regarding costing techniques, the statistical findings from the above table indicates mean scores of 1.28, 1.48 and 1.95 for absorption costing, variable costing and activity-based costing respectively. This means that apart from activity based costing, sampled firms show relatively high adoption of costing techniques specifically job costing and batch costing. The overall score for costing technique is relatively significant ( $\bar{X} < 1.59$ ). In totality, the firms have shown high level of adoption of costing system ( $\bar{X} = 1.48$  which is less than 1.59).

The findings are not only consistent with study expectations but also some theoretical positions. The relatively high level of adoption of the traditional costing techniques such as job, batch, contract, absorption and variable costing with less adoption of activity based costing provide empirical evidences to support the traditional view of management accounting system and contingency theory. The traditional perspective views MAS as systems that seek to enhance the economic performance and therefore the appropriateness of MAS is contingent to the cost of design and implementation (Waterhouse & Tiessen, 1978). The theory posits that traditional costing system is appropriate for relative small firms with relatively small overheads cost (Vokurka & Lummus, 2001). Therefore high adoption of the traditional costing techniques by manufacturing firms sampled with less than 21 employees really supports this theoretical position.

Another dimension of management accounting practice adopted by the manufacturing firms in the sample was the budgetary system. The aspects of budgetary system considered in this study include budget type and budget technique. The details of the statistical results are presented in Table 3. The purpose of this management accounting practice is to determine the existent of cost control through the application of budgetary techniques.

The findings show that the high level of sampled firms adopt overall budgetary system. The level of adoption is assessed based on the mean score. As explained earlier mean score less or equal to 1.59 implies high level of adoption and above 1.59 show low level of adoption. Based on this criterion, the sampled manufacturing firms adopt all but the financial position budget. The mean scores for sales budget, purchases budget, production budget and

cash budget were less than the threshold ( $\bar{X}$  = 1.10, 1.15, 1.27, 1.12 respectively) while financial position budget fell outside the cut-off point ( $\bar{X}$  = 1.96). The overall mean for the adoption of the various budget types used in this study was 1.32 which is really high. This means that the respondents use these budgets in cost controlling.

The results also show high adoption of flexible budgeting and incremental budgeting techniques ( $\bar{X}$  = 1.28 and 1.31 respectively). Thus, the respondents highly adopt the four budgetary techniques except static and zero based technique. Overall score for measuring the extent of adoption of budgetary technique is very low ( $\bar{X}$  = 1.60).

The results have both theoretical and empirical implications. The findings again confirm the traditional views for adopting management accounting system and the contingency position. Budgetary system is seen as cost controlling technique and management of resource (Anand et al. 2004). As postulated by the traditional views and contingency, the choice of management accounting practice depends on the cost effectiveness and efficiency, therefore firms will apply techniques for that can help to control cost. This implies that high adoption of budgetary system as found in this study explains the above theoretical position.

The high level of adoption of budgetary system explains why despite the challenges within the manufacturing sectors causing a lot of players to exit, firms within the sample frame are still coping (Davies & Karr, 2015). This is an important finding because according to Obed (2016), one of the

reasons for the folding up of some of the players within the sector is the operational cost therefore one can only cope with strong budgetary system.

The study also affirms the conclusion drawn by Anand *et al.* (2004). These authors examined cost management practices in India. They concluded that those firms which adopt traditional costing system and less of ABC have high priority for budget. Under the costing system, the study showed high adoption of traditional costing techniques and less for activity based costing, hence the subsequent findings of high adoption of budgetary system is indeed affirmation.

The third dimension of management accounting practice considered in this study is the performance evaluation technique. The study examined both financial and non-financial techniques. The analysis as depicted by the table. It is evidenced from the table that the respondents mainly used operating income, sales growth and cash flow as means to evaluate financial performance. The mean scores for these indicators were below the cut-off point ( $\bar{X}$  = 1.37, 1.06 and 1.14 respectively). It also revealed that return on investment and variance analysis are not used as financial evaluation technique. The low adoption of these techniques could stem from the fact that they are relatively complex and require high level of skilled personnel to man them. However, these personnel are often expensive to maintain. The cost involved and the complexity of these elaborate techniques may outweigh their benefits. The overall score for financial evaluation technique is 1.45 which means that, on a whole the respondents used the financial evaluation techniques considered in this study.

Table 3 also indicates very high adoption of customers' satisfaction and on time delivery as non-financial measure. The mean scores for customers' satisfaction and on time delivery were less than 1.59 ( $\bar{X} = 1.06$  and 1.05 respectively). These statistics are very high. This means that the respondents highly consider satisfaction of customers and timely delivery of products as means to evaluate their performance. The overall score for the non-financial evaluation is 1.05.

Although the findings on the application of financial evaluation technique or quantitative performance measure contradict the conclusion drawn by Waweru, (1999), the qualitative evaluation such as the non-financial measure is consistent with the findings. Waweru's study found that limited application of quantitative management accounting techniques such financial evaluation but high adoption of non-quantitative performance measurement technique in Kenya. Thus, while this study saw high level of adoption of quantitative technique such as operating income analysis, sales growth and cash flow analysis, Waweru reported the contrary.

The high adoption of the non-financial evaluation technique particularly customers' satisfaction and timely delivery is consistent with the industry. The majority of the players in the manufacturing sector produce similar goods and hence compete for customers with similar demands and preference (see Table 2). To cope with the competition, to survive and to grow, it is undebatable that customers' satisfactions and timely delivery are considered a hallmark. Therefore, it is no news or surprise when the findings depict such trend.

The last dimension considered in this study under management accounting practice is the strategic management accounting technique. The extent of adoption of strategic management accounting technique is summarised based on the data collected on Table 3. The overall mean score that measures the level of strategic management account practice is 1.13. This statistic is very high indicating high level of strategic management accounting practice. This means that the samples manufacturing firms in Kumasi metropolis high adopt strategic management accounting practices. This dimension has four key indicators which contribute the overall score. Namely, cost analysis across stages of product development, strategic factors in pricing decision, competitors' data collection and monitoring cost across stages of product development.

Cost analysis across stages of product development, the first indicator, measured the extent to which respondents exhibited strategic management accounting practices through anticipating and analysing cost across the various stages of product development. Respondents were generally strategic in terms of this indicator (26.7%,  $\bar{X} = 1.07$ ). They encourage, support and adopt this strategic cost analysis procedure. This indicator has the highest score among the other indicators and therefore contributed significantly to the grand mean or score.

The second indicator of strategic management accounting practice, strategic factors in pricing decision, measured the extent to which the respondents consider strategic factors such as installations, operations, supports, maintenance and disposals in pricing decisions. Per the findings in

Table 3, respondents did favour strategic factors in their pricing decisions (25.6%,  $\bar{X}=1.11$ ). The mean score is also high as it is less than the cut off ( $\bar{X}=1.59$ ).

The respondents also adopted competitors' data collection system, the third indicator of strategic management practice used in this study. This indicator measured the tendency that the respondents systematically collect data on competitors' price reactions, demand reactions and market positions. The results from the Table 3 shows a mean score of 1.15 which is relative high in respect of the cut-off point (less than the cut off of  $\bar{X}=1.59$ ). This implies that the players in the manufacturing sector keenly monitor their competitors through management accounting system.

Last indicator under strategic management practice, monitoring cost across stages of product development, is a cost monitoring tool. This indicator measured the extent to which the strategic factors used in pricing decisions are monitored to avoid unexpected escalation of prices. The findings from the study as presented in Table 3 indicate that the respondents adopt this indicator as part of their strategic management accounting practice. The mean score of this indicator is relatively high ( $\bar{X}=1.19$ ). This means that the respondents highly monitor the strategic factors used in pricing decision.

The high adoption of strategic management accounting practice by respondents found in this study supports the institutional theoretical position or approach. Ma and Tayles (2009) provide that strategic management accounting practice uses both internal and external factors to influence an organizational change which is the cardinal position of the institutional



framework. Collection of data on competitors' price reactions, demand reactions and market positions are external variables which affect organizations. Similarly, other internal factors include cost analyses; pricing decisions and monitoring also affect organizational change. Therefore high adoption of these external and internal practices by the respondents as reported in this study shows the readiness to adapt to change which is what institutional framework postulates (Barnett &Caroll, 1995; Burns &Scapens, 2000).

The findings on the high level of adoption of strategic management accounting practice are consistent with the conclusion drawn by Abdel-Kader and Luther (2006). In their study they found that the most notable innovative management accounting techniques currently in used are activity based techniques, strategic management accounting and the balance scorecard. The results however contract the findings of Adelegan (2004) and Mahfar and Omar (2004). These authors used data from Nigeria and found that management accounting practices in developing country of Nigeria is still limited to the process of cost determination and financial control using budget. Thus, contemporary management accounting practices such as activity based techniques and strategic management accounting are virtually absent.

The contradiction may stem from the players in the industry, study settings, differences in economic structure and culture. It is against this that Yesgaet (2009) stated that 'No one size fit for all' Thus, findings in a particular economy may not fit in other economies.

### **Benefits of Appropriate Management Accounting Practice**

The purpose of the second objective was to assess the benefits associated with using appropriate management accounting practices in the manufacturing firms. Benefits for purposes of this study are measured from six areas. The areas are planning the future strategies, tactics and operations, controlling current activities, measuring and evaluating performance, optimizing the use of firm's resources, reducing subjectivity in the decision making process and improving internal and external communication.

The extent of benefit as estimated by each measuring variable was independently determined using a mean scale. The mean interval scale used in this study was 1 to 5 with 1 to 2.9 indicating low level of benefits and 3 to 5 indicating high level of benefit. The cut-off point in this measure was arrived at using the mean of the interval scale. The extent of benefits was determined first for each indicator and subsequently for the entire indicators. This method of estimation is consistent with the literature. Following, Dess, Lumpkin and McFarlin (2005), mean scale of 1 to 5 can be used to assess the level of benefits of management accounting practice to manufacturing firms. Dess et al (2005) explained that on a mean scale of 1 to 5, the midpoint or cut-off mean is 2.9, therefore, a mean score of less than 2.9 is low while greater than 2.9 is high. This does not require any standard error or t-statistics for determining significance. The present study follows this procedure. The details of these statistics are presented on Table 4 .

**Table 4: Benefits of Management Accounting Practices of Manufacturing Firms**

Benefit Indicator	Mean
Planning the future strategies, tactics and operations	3.63
Controlling current activities	3.36
Measuring and evaluating performance	3.33
Optimizing the use of firms resources	3.36
Reducing subjectivity in the decision making process	3.41
Improving internal and external communication	3.54
Grand mean	3.44

\*Mean: below 2.9 = low benefit and greater or equal to 2.9 = high benefit

Source: Field work (2015)

Overall, the level of benefits derived from the adoption of the management accounting practices by the respondents as discussed under objective one and presented in table 4.3 is depicted in Table 4. From the table, the overall benefit was high ( $\bar{X} = 3.44$ ) as it is higher than the cut-off point ( $\bar{X} = 2.9$ ). The overall score is measured by the grand mean. The statistical presentation of the benefits have been segregated into six with the detailed individual statistics analysed in Table 4

The first benefit accrued to the adoption of management accounting practice is planning. The planning measured the extent to which the adoption of management accounting practice facilitates formulation and implementation of future strategies, tactics and operations of the respondents. Respondents were generally believed that management accounting practices within their firms serve their planning needs as depicted by the high mean score ( $\bar{X} =$

3.63). The results imply that management accounting practice helps manufacturing firms to plan their future strategies, enhance their tactical and operational activities or plans. The statistic is highly significant as it is farther away from the cut-off of 2.9.

Table also shows control benefits derived from management accounting practice. This second area of benefit looks at how management accounting practice enhances their control activities. The table revealed high mean score ( $\bar{X} = 3.36$ ). This score is higher in relation to the cut-off score ( $\bar{X} = 2.9$ ). Thus, the respondents enjoy cost and other control benefits from their management accounting practices. This suggests that application of the management accounting techniques and systems used in this study helps to control the various organizational activities.

The respondents also supported management accounting practice facilitates measurement and evaluation of performance. This is evidenced by the mean score ( $\bar{X} = 3.33$ ) which crosses the cut-off mean. Thus, the respondents generally believed that their management accounting systems are used to measure and evaluate the level of performance.

The fourth assessment of the level of benefits associated with management accounting practices is optimising the use of firms' resources. The results in respect of this assessment also indicate high benefit of management accounting practice. This assessor generated higher mean value ( $\bar{X} = 3.36$ ) in relation to the cut-off value of 2.9. It is therefore conclusive that

the sampled firms optimise the use of their resources through their management accounting practices.

Regarding the fifth assessment indicator, reduction of subjectivity in decision making, the statistics of 3.41 from the table shows that management accounting practices help the respondents to minimise subjectivity in decision making processes. The results suggest that high level of adoption of management accounting practices reduce the extent of subjectivity in decision making.

Last indicator under the benefits of strategic management practice, communication, measured the extent to which management accounting practice facilitates internal and external communications within firms. From the Table 4, it is revealed that the mean statistic is significant ( $\bar{X} = 3.54$ ). This means that management accounting practices smooth communication process within firms both internally and externally.

From the statistical discussions above, it can be deduced that management accounting practice is organizational change agent. It changes how adopters plan, control the overall organizational activities and performance appraisal (i.e. performance measurement and evaluation). The practice also change organizational response to the use of firms resources, trim their decision making processes by minimising the degree of subjectivity and finally enhances communication. Thus, by adopting management accounting systems, organizations adapt to change. These findings are consistent with assumptions of the old institutional economic (OIE) theory.

Under old institutional economic (OIE) theory, management accounting practices can enhance organizational change by both shape and being shaped by institutions which govern organizational activity. According to Burns and Scapens (2000), OIE theory defines institution as “a way of thought or action of some prevalence and permanence, which is embedded in the habits of a group or the customs of a people” (Burns & Scapens, 2000). As revealed in this study benefits accrued to management accounting practice such as planning, controlling, optimal use of firms resources, reduction of subjectivity in decision making and communication collectively shapes the thoughts or actions of the organizational members.

The high level of benefits associated with management accounting practices revealed in this study confirms the conclusion drawn by Hilton and Platt (2011). The authors stated that management accountants are important strategic partners in an organization as they provide greater tools and information needs to management through their management accounting systems. In addition, the results in this study affirm the assertion in the earlier study by Mahfar and Omar (2004), who noted that management accounting form an integral part of the management process in an organization, where it provides essential information to the business in its planning, evaluating, controlling and decision making process.

### **Determinants of Management Accounting Practice in Manufacturing Firms**

The first and second objectives established the extent of adoption of management accounting practices and the associate benefits respectively.

Having determined that management accounting practices play useful role in manufacturing firms, the third specific objective examines the determinants of adoption of the management accounting practices. Thus the third objective seeks to examine the factors that influence the extent to which firms adopt management accounting system. Based on the literature review four key variables were selected to test their influence on the extent of adoption of management accounting practices, namely, market competition, characteristics of the accounting staff, owner/manager participation and changes in technology (Abdel-Kader & Luther, 2008; Gordon & Miller, 1976; Kader & Luther, 2004). These variables are tested against the level of management accounting practices within the selected manufacturing firms in Kumasi metropolis.

Prior to the estimation of the influence of the above variables on the level of management accounting practices, the variables are first measured. The grand mean score of the management accounting practice was used to estimate the level of management accounting practice and the other variables. Like any study on determinants, the variable to be determined is the dependent variable. Thus, in this study the level of management accounting practice is the dependent variable while the changes in technology (CIT), characteristics of accounting staff (CAS), market competition (MC) and owner/management participation (OMP) are the independent variables. These have been clearly defined under the methodology. The estimation is based on standard multiple regression via SPSS as explained in chapter three.

**Table 5: Determinants of Management Accounting Practice (MAP)**

Variable	Beta ( $\beta$ )	t-stats	Std. Error	P – value	R <sup>2</sup>
Constant		2.095		0.004	0.673
CIT	0.103	3.440	0.030	0.000***	
CAS	0.061	1.756	0.035	0.042**	
MC	0.068	1.986	0.034	0.037**	
OMP	0.067	2.925	0.023	0.002***	
Sums of Square of regression (125.683),			Adj. R <sup>2</sup> 0.649		
Total sums of square (186.750)			F-stat 103.221 (0.000)		
Sign. Level: (***) at 1%, ** at 5%)			Observations = 91		

Source: Field work (2015)

The results from the overall score for the management accounting practice was used as the estimates of the level of management accounting practices of the manufacturing firms within the same. Where:

CIT is the changes in technology

CAS is characteristics of accounting staff

MC is market competition and

OMP is owner/management participation

It can be observed from Table 5 that the model used for analysing the determinant of management accounting practices is good. The goodness of the model can be deduced from the overall fitness of the model. This fitness is



measured by the statistics of the  $R^2$  and the adjusted  $R^2$ . The  $R^2$  statistics from the Table is 0.673, indicating that the chosen independent variables are indeed determinants of the extent of adoption of management accounting practices among respondents (sampled firms). This implies the variables jointly predict 67.3% of the extent of management accounting practices adopted. Similarly, the  $R^2$  statistics of 67.3% implies that about 32.7 percent ( $100 - 67.3$ ) of extent of adoption of MAP is explained by variables other than the predictors used in this study. The inferences from the  $R^2$  statistics are not different from the adjusted  $R^2$  statistics as the adjusted  $R^2$  statistics is 0.649. Therefore, after adjusting for the degree of freedom, still the standard multiple regression estimation is still fit.

From Table 5 all the predictors have significant association with the level of management accounting practices and hence determinants of management accounting practices (MAP) within manufacturing firms in Kumasi metropolis. It can be deduced from the t-statistics and the corresponding p-value that changes in technology (CIT) has the greatest coefficient and t-statistics in terms of magnitude of the determinants of the level of management accounting practices in the sampled firms. The CIT had t-statistic of 3.440 which is the greatest among the other variables. It has significant coefficient of 0.103 (P-value = 0.000). The significance level of this coefficient is less than one percent. The coefficient is positive indicating positive influence on MAP. This means that a one percent increase in the technological level will lead to 0.103 increase in the level of MAP holding other factors constant. On the other hand all other things being equal, a

percentage decrease is the level of adoption of technology by the respondents will decrease the level by 0.103%.

The above findings have theoretical significance. The findings are consistent with the contingency theory. In the contribution of Otley (1987) to the contingency theory, the author extended the application of the theory to management accounting practice and echoed the assertion of Waterhouse and Tiessen (1978) where Otley (1987) revealed that technological changes are contingent factors which determine the extent of application of management accounting technique. The significant positive relationship found between the level of technological changes and the management accounting practice is thus consistent with the contingent theory. Therefore, the findings provide empirical support to the contingent theory.

The results also affirm the prior study by Abdel-Kader and Luther (2008). The authors noted that technology affect the whole process of management accounting including planning, controlling, decision making and communication. Abdel-Kader and Luther (2006) revealed that while the firms moved into a more uncertain environment with frequent technological advancement, the level of sophistication of management accounting practices increased. All these prior empirical evidences are consistent with the positive influence of technology on level of management accounting practice found in this study. These inferences about empirical consistency are evident in the significant coefficient of the level of changes in technology as abbreviated as CIT.

It is therefore important to state that technology is not a substitute to management accounting practices by rather a complement. It can be concluded from the findings that technology is a key variable in assessing the MAP needs of manufacturing firms in Kumasi metropolis.

Regarding accounting staff, it can also be seen that it is associated with of the level of MAP. Like the technology, the number of accounting staff, level of experience and competencies are also determinants of the level of MAP. From the table there is significant positive relationship between characteristics of accounting staff (CAS) and MAP of the respondents. The nature of influence –positive or negative is determined by the coefficient measured by the beta (B). The coefficient of CAS is positive (coefficient = 0.061) with 5 percent significant level (P-value = 0.042).

This means that the null hypothesis is rejected to uphold the alternative hypothesis that characteristics of accounting staff are determinants of the level of MAP. The t-statistic is also high (t-stat = 1.756) which indicates that CAS is indeed relevant in determining the extent of MAP. The coefficient value of 0.061 implies that one percent improvement in the characteristics of accounting staff-number of management accountants, high experience level and competencies will lead to 0.061 improvements in the level of MAP of the sampled firms, all other things being equal. Similarly, should these indicators deplete by one percent, holding other factors constant, the level of MAP will reduce by 0.061.

The significant influence of accounting staff on the level of MAP is consistent with theory of intuition. The accounting staff are the implementers

and administrators of management accounting system, therefore by intuition, it is expected that accounting staff contribute to the level of MAP. Consistent with the intuition theory is the assertion by Hilton and Platt (2011). Hilton and Platt (2011) explained that management accountants are important strategic partners in an organization's domestic and international management teams and influence both management accounting system and general organizational design greatly.

Additionally, the findings affirm the first dichotomous assumption of the institutional theory. Drawing from Ma and Tayles (2009), the informal structure change within the first dichotomous assumption of the institutional theory suggests that when key personnel such as accountants with requisite expertise are introduced into an organisation, additional relevant management accounting techniques can be adopted. This implies that there is a theoretical relationship between accounting staff and management accounting practice. This is similar to the empirical results found in this study. Thus, the significant positive coefficient affirms the theoretical assumption of Ma and Tayles (2009).

The above discussions suggest that accounting staff are key determinant of the level of MAP. Therefore in organizations where the accounting department or function is effective, it is expected that such organizations will have sound MAP. In the same vein the ineffectiveness or inefficiency of the accounting function translates into low level of MAP.

Market competition is the third determinant used in this study. From the literature, market competition is one of the external factors that influence the

level of MAP. To confirm or refute the claims, it has also been used in analysing the determinants of MAP. The analysis from the Table 5 indicates that market competition as denoted by MC has positive significant effect on the level of MAP of the selected manufacturing firms in Kumasi metropolis. The positive significant coefficient of 0.068 (P-value = 0.037) suggests that market competition have positive consequences on the level of MAP.

Since the P-value is less than 5 percent, the study rejects the null hypothesis and concludes that indeed market competition also determines the level of MAP in the manufacturing firms within Kumasi metropolis. The high t-statistics (t-stat = 1.986) shows how relevant the variable is.

Both the institutional theory and contingency theory posits that organizational designs, systems and frameworks adapt to changes in the environment. For instance, Barnett and Carroll (1995) stated that the institutional theory assumes that external environmental factors and market conditions impact organizational change and development. This means that the extent of market competition determines organization change which may include the level of MAP. The positive significant relationship in this study therefore contributes to these theories.

The last determinant considered in this study is owner/managers participation. These agents are the brain behind the overall strategies, policies and the direction of firms. It is therefore expected that their philosophies, attitudes, believes and actions influence the design and implementation of organizational systems including management accounting systems. Consistent with the study expectation, it is evident from the Table 5 that owner/manager

participation (OMP) is significant variable that determines the extent of MAP of the respondents. This conclusion is read from the significant of the coefficient of OMP.

From the Table 5 the coefficient of OMP is 0.067 which is significant at one percent confidence level (P-value = 0.002). This means that the null hypothesis: Owner/manager is not a significant determinant of the extent of management accounting practice; is rejected. It is therefore concluded that owner/manager determines MAP. The high t-statistics (t-stat = 2.925) shows how relevant this variable is in determining the level of MAP. Additionally the positive coefficient indicates that OMP influences MAP positively. Thus, the more owners or managers participate in management accounting processes, the higher the extent of MAP and vice-versa. Again, the OMP coefficient of 0.067 means that a percent increase in owner/manager participation in management accounting activities will lead to 0.067 improvements in the level of MAP and vice-versa.

Although the findings are consistent with both study expectations and intuitive theory, they are inconsistent with the results of Waweru (1999). Waweru study indicated that there was no significant relationship between management accounting practices and the ownership of the firm. The results however affirm some findings of other empirical studies. For instance Hilton (2000) points that management accounting system is strengthened when managers specify a major part of their working time to access, evaluate and interpret the changes and management decision making process. Thus managers' involvement or participation or attention to MAP influences the extent of the practice. Similarly, Allahyari and Ramazani (2011) also affirm

that manufacturing managers of firms are critical agents to discover ways to balance costs cutting and quality improvement by considering profitability.

### **Assessment of Performance of Manufacturing Firms**

This section discusses the fourth objective of study. The purpose of this objective is to ascertain the level of performance of the manufacturing firms within Kumasi metropolis. Performance in this study has been operationalised by six performance indicators, namely, level of productivity, product quality, number of deliveries on time, sales growth rate, operating profit growth rate and cash flow growth rate.

The level of performance of the respondents has been estimated through a scale of 1 to 4. The mean value determines how high or low the performances of the respondents are. On the mean interval scale, the cut-off mean is 2.5. Therefore any mean score greater or equal to 2.5 is considered high but below the cut-off means the performance is low. As explained under the objective 3, the measurement of the level of performance follows Dess, Lumpkin and McFarlin (2005). Since the study relies on primary data, the use of scale to measure performance is the obvious choice. The study used primary data since not all the firms within the study framework have public data on their performance. Most of them were not ready to release their financial statements. Thus, the sample size would be relatively small if the secondary data were to be used. These explained why the study followed other prior studies and used Likert scale to assess performance. This measurement does not require any standard error or t-statistics (Dess et al, 2005). The statistical results from the data in respect of these indicators are shown on Table 6.

The overall performance for all the performance indicators is represented by the grand mean. From the above table the grand mean is 3.245 which very high. Thus, collectively the respondents have high level of performance. The extent of the overall performance is really high as the score is higher than the cut-off mean ( $\bar{X} = 2.5$ ). The table segregates statistics of the data into the scores for the individual indicators and are therefore discussed as follows:

**Table 6: Performance of Manufacturing Firms**

Performance Indicator	Mean
Level of productivity	3.385
Product quality	3.260
Number of deliveries on time	3.260
Sales growth rate	3.262
Operating profit growth rate	3.126
Cash flow growth rate	3.177
Grand mean	3.245

\*Mean: below 2.3 = low performance and greater or equal to 2.5 = high performance

Source: Field work (2015)

The first performance indicator chosen in this study was level of productivity. The level of productivity is an operational performance indicator and measured the extent to which firms utilise their capacity and resources. Respondents generally believed that their productivity levels are high as depicted by the high mean score ( $\bar{X} = 3.385$ ). This is the highest score among



the scores of all performance indicators used in this study. The statistic is highly significant as it is farther away from the cut-off of 2.5.

The second performance indicator, product quality, measured the quality standards of the respondents. This is a delicate measure as it is almost certain that the mean score will be high. The rationale behind this assertion is that it is highly probable that respondents will rate this indicator high because they may reason that doing so will provide better picture for their firms. To the contrary, level of productivity and sales growth rate had higher score than product quality. This may suggest that the respondents were objective. Although product quality did not score the highest mean, it is higher than the cut-off mean ( $\bar{X}$ :  $3.36 > 2.5$ ). Thus, the respondents produce high product quality to their customers.

Number of deliveries on time was also used as one of the performance indicators. The respondents generally agreed that they highly meet customers' delivery schedules. Thus, the numbers of time deliveries are met based on the agreed date are relatively good. The data analysis in Table 6 indicates high mean score ( $\bar{X} = 3.260$ ) which crosses the cut-off mean. Thus, the respondents have high timely delivery of products.

The fourth performance indicator considered in this study was sales growth rate. Sustainability of firms partly depends on sales performance. Positive sales trend is a good indicator for overall firms' performance. The results from the table indicate high level of sales growth. The score for the respondents in respect of sales growth is higher than the cut-off mean value (

$\bar{X} = 3.262$ ). It can therefore be concluded that the sampled firms have high sales performance.

Although firms may make high sales, the operational cost may consume virtually the sales proceed. Therefore as part of the assessment of the performance level of firms, the study considered operational profit growth. Operational profit measured the residuals of sales after allowing for operational cost. The table shows that this performance indicator is also high. Specifically the mean score of the respondents regarding operational profit is 3.126. This suggests that the sampled firms are able to control cost. The mean score is greater than the cut-off mean ( $\bar{X}$ ;  $3.126 > 2.5$ ).

Last performance indicator, cash flow growth rate measured the liquidity strength of the respondents. Firms' survivor depends on their ability to pay off operational expenses. A firm may yield high profit but this may not translate into cash as profit is accounted on accrual basis. Cash flow rate is therefore seen as a key performance indicator with strong consequence on going concern. The study included this indicator to assess the liquidity health of the manufacturing firms within the sample. From the table 4.4, it is revealed that the mean statistic for cash flow rate is significant ( $\bar{X} = 3.177$ ). This means that the liquidity position of the respondents is high.

The above statistical discussion can be situated in the existing literature on the subject matter. The high operational profit and cash flow performance is consistent with the level of MAP of the respondents. MAP allows for control and monitoring of cost as well as efficient use of resources and this

contributes to minimising cost and ultimately enhances profits and liquidity (Waweru, 1999). Similarly, the results affirm the findings of Vokurka and Lummus (2001). These authors effective management accounting system minimise manufacturing overheads rates which determines the level of profits and cash.

In addition, the increase in productive and product quality which suggests efficiency in operation, business size and customer satisfaction found in this study confirm the earlier study by Liaqat (2006). Liaqat also discovered that high level of MAP (ABC system) enhance among others operational efficiency, degree of customization, proportion of overhead to total cost, and business size.

### **Relationship between Management Accounting Practices and Organizational Performance**

Having assessed the level of adoption of management accounting practices and performance among the selected manufacturing firms in Kumasi metropolis, the study proceeds to examine the relationship between these variable. The first objective discussed the level of adoption of management accounting practices (MAP) while the fourth objective also assessed the level of performance of these respondents. The last objective statistically examines the relationship between the level of management accounting practice and organizational performance. The management accounting practice variables used in this assessment are costing system (CS), level of budgetary system (BS), financial performance evaluation system (PESf), non-financial performance evaluation system (PESnf) and strategic management accounting (SMA). Organizational performance was estimated using indicators such as

level of productivity, product quality, number of deliveries on time, sales growth, operational profit and cash flow.

**Table 7: Relationship between Level of Management Accounting Practices and Performance**

Variable	Beta ( $\beta$ )	t-stats	Std. Error	P – value	R <sup>2</sup>
(Constant)		3.764	0.650	0.000	0.583
CS	0.562	2.081	0.270	0.040**	
BS	1.383	3.919	0.353	0.001***	
PESf	0.440	1.875	0.235	0.064*	
PESnf	0.263	1.270	0.207	0.207	
SMA	0.390	1.689	0.231	0.073*	
Sums of Square of regression (152.556),				Adjusted R <sup>2</sup>	0.533
Total sums of square (261.674)				F-stat	89.417 (0.000)
Sign. Level: (***) at 1%, ** at 5%, * at 10%)				Observation = 91	

Source: Field work (2015)

The study used grand mean to measure the score for the study variables. The overall score of organizational performance was regressed on each of the MAP indicators used in this study. In examining the relationship between the two variables, the study used standard multiple regression technique as recommended by Leech, Barrett and Morgan (2005). According to Leech, et al (2005), this regression allows researchers to enter different independent variables into one model concurrently. Similarly, Pallant (2007) noted that this technique indicates the separate contribution of each independent variable to the total variance in a dependent variable.

The estimation model, as shown in Table 7 comprised all five dimensions of management accounting practices as independent variables and organizational performance as the dependent variable. The assessment was

based on the R-square ( $R^2$ ), co-efficient of the variables and their corresponding significance levels (p-values) and the t-statistics.

The  $R^2$  was relatively good ( $R^2=0.583$ ), indicating that the fitness of the model used to examine the relationship. This suggests that the explanatory variables: costing system (CS), level of budgetary system (BS), financial performance evaluation system (PESf), non-financial performance evaluation system (PESnf) and strategic management accounting (SMA) account for about 58.3% changes in organizational performance. Deductively, about 41.7% ( $100-58.5$ ) of variance in the organizational performance is explained by other variables.

Finally, Table 7 provides an  $F$ -test for the null hypothesis that none of the explanatory variables are related to organizational performance, or in other words, that  $R^2$  is zero. Here the study clearly reject this null hypothesis ( $F(5,91) = 89.417, p < 0.000$ ), and so conclude that at least one of the management accounting practices, namely, costing system, budgetary system, financial performance evaluation technique, non-financial performance evaluation techniques and strategic management accounting technique is related to organizational performance of manufacturing firms.

As presented in the conceptual framework in chapter two and evidenced in the significant values of the coefficients of the variables depicted in Table 7, all the five dimensions of MAP contributed uniquely to explaining variances in organizational performance. With the significant coefficients, the study rejects the null hypothesis and concludes that level of management accounting practices affect organizational performance. Budgetary system made the most significant contribution to organizational performance ( $\beta: 1.383$ ; p-value: 001)

while non-financial performance evaluation techniques contributed the least ( $\beta$ : 0.263; p-value: 0.207). The other remaining dimensions contributed significantly to the variance in organizational performance.

Whiles the null hypothesis is rejected at the significant level of one percent (p-value.  $0.001 < 0.000$ ) in respective of budgetary control or system, null hypotheses for costing system, financial performance evaluation technique and strategic management accounting technique were rejected at confidence interval of 5 percent, 10 percent and 10 percent respectively. However, the study failed to reject the null hypothesis on non-financial evaluation technique (p-value.  $0.001 > 0.1$ ). The statistical results are presented in Table 7.

The explanatory variables have positive coefficients indicating a positive relation between management accounting practice and organizational performance. As discussed earlier all the independent variables but non-financial evaluation technique have significant coefficient. The coefficient for costing system is 0.562 (p-value: 0.040) which means that a percentage increase in the extent to which the respondents apply costing techniques will lead to 0.562 increase in organizational performance and vice-versa holding other variables constant. Therefore to enhance performance, management strategies and policies should aim at improving the costing system.

Similarly, the budgetary control or system is regarded as the explanatory variable with the most predictive power and therefore highly sensitive to organizational performance. BS has the strongest coefficient ( $\beta$ : 1.383; p-value: 0.001) indicating that one percent increase in the level of budgetary

control will enhance organizational performance by 1.383 while a percentage decrease in the level of budgetary control will deplete organizational performance all other things being equal. Like the costing system, it is also expected here that management critically evaluate and manage the determinants of the level of budgetary control so as to keep track of performance.

The coefficient for financial performance evaluation technique is 0.440 (P-Value: 0.064). This also implies that one percent improvement in the extent of applying financial performance valuation technique will generate additional 0.440 increase in organizational performance of the respondents. On the other hand, should the level of application of financial performance evaluation technique be minimised by one percent, organizational performance will accordingly reduce but by 0.440. Similarly, as depicted by Table 7, strategic management accounting has significant positive influence on organizational performance ( $\beta$ : 0,390; p-value 0.073). This also suggests that when the respondents improve the application of SMA techniques, they are likely to improve organizational performance and vice-versa.

The overall results from the study confirm that management accounting system is an organizational change agent as deduced from the institutional theory discussed in chapter two. The findings are consistent with the contribution of Burns and Scapens (2000) to Using institutional theory. Burns and Scapens concluded that management accounting change can be conceptualized as change in organizational rules and routines which affect every aspect of the organization and this include organizational performance. They also found evidence to support the old institutional economic (OIE)

theory assumption that management accounting practices can both shape and be shaped by institutions which govern organizational activity. The positive influence found in this study also confirms that MAP can shape organizational activity in this organizational performance.

The evidences found in this study also prove that management accounting practices are organizational performance contingencies. According to the contingency theory, contingencies to a variable are those variables which significantly explain variations in the variable (Morton & Hu, 2008). Therefore, the significant contribution of the management accounting variables to explaining variations in the level of organisational performance indicates that organisational performance is contingent on management accounting variables.

Furthermore, the study results support the institutional theory. The institutional theory suggests that there is a relationship between the level of management accounting practices and organisation performance (Burns &Scapens, 2000). Therefore, similar to Burns and Scapens (2000), the significant positive influence of management accounting variables affirms this theoretical assumption.

In addition, the findings support the results by Anand, Sahay, and Saha(2004). Like this study, Anand, et al (2004) found that management accounting practices influence cost and the profit of firms Similar to these findings, Vokurka and Lummus (2001) revealed that MAP minimises manufacturing overheads and this will ultimately improve performance indicators. Furthermore Liqat (2006) also discovered a significant positive



relationship between management accounting practices and organizational performance, similar to the findings in this study.

One implication of the findings is that adoption of effective management accounting practice is a positive step toward improving the organisational performance of manufacturing sector. This is evident in the positive relationship between the level of management accounting practice and organisational performance. Therefore, when management of firms within the sector introduce modern MAP, then they are taking pragmatic steps to address performance challenges.

## CHAPTER FIVE

### SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

#### **Introduction**

This chapter presents summary of the study, the various conclusions drawn from the findings and study objectives, recommendations based on key findings.

#### **Summary**

The study focused on management accounting practices and performance of manufacturing firms in Kumasi metropolis. This broad focus or general objective of the study was operationalized or narrowed into five specific objectives. The first specific objective was to identify the management accounting practices adopted by manufacturing firms in the Kumasi Metropolis. The second objective was to assess the benefits that firms derive from the use of appropriate management accounting practices. The third objective of study determined the factors that affect the use of management accounting practices among manufacturing firms in the Kumasi Metropolis. In addition, the study assessed the organizational performance of the sampled firms as the fourth specific objective. Finally, the study examined the relationship between management accounting practices and organizational performance of manufacturing firms in Ghana.

The target population was 150 manufacturing firms within the study area. The study used census rather than sampling. Therefore, data were obtained from all 150 firms. All the firms but 45 responded to the questionnaire. This correspondsto a response rate of 70%. The study used a survey design for the conduct of the research. The data needed for the study

were collected via a self-administered questionnaire. Prior to the official administration, pretest or pilot testing was conducted to check the accuracy, validity and reliability of the questionnaire. The questionnaire was designed from information gathered from the literature review. The data collected were basically on the respondents' background and each specific objective.

The data on the background were analysed using descriptive statistics such as frequencies and percentages. Similarly other data collected on variables which could not be analysed using higher-order statistical techniques were run using descriptive statistics. Standard multiple regression were also used to assess relationships among the study variables. This statistical technique, standard regression, was specifically used to address objective three and objective five. The Statistical Product and Service Solutions version 17 (SPSS 17.0) was used for the data analyses. A summary of the major findings revealed by the study were as follows.

The first study objective was to identify the management accounting practices adopted by manufacturing firms in the Kumasi Metropolis. The major findings under this objective were as follows:

1. The descriptive statistics presented showed that all the selected management accounting practices have been adopted in some sort by the respondents. The analysis was based on the norm that a mean score less or equal to 1.59 is high and low when it is greater than 1.59. The specific mean values for costing system, budgetary system, performance evaluation system and strategic management accounting were all greater than the cut-off point.

2. The study observed that the respondents apply the selected management accounting techniques in their firms. It was concluded that costing system, budgetary system, performance evaluation system and strategic management accounting are the key management accounting practices among the respondents.

The second objective was to assess the benefits that firms derive from the use of appropriate management accounting practices. The key findings were as follows:

1. Benefits for purposes of this study were measured from six areas. The areas included: planning the future strategies, tactics and operations, controlling current activities, measuring and evaluating performance, optimizing the use of firm's resources, reducing subjectivity in the decision making process and improving internal and external communication.
2. The data collected under this objective were analysed using descriptive statistics. The mean interval scale was used to evaluate the benefits. On the mean scale, mean of 1 to 2.9 indicating low level of benefits and 3 to 5 indicating high level of benefit. The study showed that the overall benefit was high. Respondents generally believed that management accounting practices within their firms serve their planning needs. On the basis of control benefits, the results revealed that the existing management accounting practices enhance the control activities of the manufacturing firms as indicated by high mean score.

3. The respondents believed that management accounting practice facilitates measurement and evaluation of performance. This was evidenced by the mean score which crossed the cut-off mean.
4. The results also indicated that management accounting practice helps the sampled firms to optimize the use of their resources. This assessor generated higher mean value in relation to the cut-off value of 2.9.
5. The findings showed that management accounting practices minimized subjectivity in management decision. The study also revealed that management accounting practices ensured smooth communication process within firms both internally and externally.
6. Overall, it was concluded that management accounting practices are useful for planning, controlling, performance evaluation, decision making and communication within manufacturing firms in Kumasi metropolis.

The third objective was to determine the factors that affect the use of management accounting practices among manufacturing firms in the Kumasi Metropolis. The results revealed the following:

1. The study used four key variables to test their influence on the extent of adoption of management accounting practices, namely, market competition, characteristics of the accounting staff, owner/manager participation and changes in technology. Grand mean approach was used to measure each of these determinants as well as management accounting practices.
2. It was observed that the model used for analysing the determinant of management accounting practices is good. The fitness of the model was

revealed by the statistics of the  $R^2$  and adjusted  $R^2$ . It was resolved that the chosen independent variables are indeed determinants of the extent of adoption of management accounting practices among respondents.

3. Changes in technology determine the extent of management accounting practices. The coefficient was positive and meaning that an increase in level of technology will increase the extent of management accounting practices. The corresponding t-statistics for change in technology was significant. It was concluded that changes in technology has positive influence on management accounting practice.
4. A significant positive relationship between characteristics of accounting staff (and management accounting practice was found. The positive influence was determined by the coefficient measured by the beta (B). The coefficient of accounting staff was positive. The positive coefficient meant that an increase in accounting staff, their experiences and competencies will increase the extent of management accounting practices and vice-versa, all other things being equal.
5. The t-statistics for accounting staff as determinant was significant. It was concluded that accounting staff is a determinant of management accounting practices of manufacturing firms.
6. The results indicated that market competition has positive significant effect on the level of management accounting practices of the selected manufacturing firms in Kumasi metropolis. This was evident in the positive significant coefficient.

7. The high t-statistics showed how relevant the variable is. It was concluded that indeed market competition also determines the level of MAP in the manufacturing firms within Kumasi metropolis.
8. Owner/manager participation was significant variable that determines the extent of MAP of the respondents. The coefficient of the determinant was significant. It was therefore concluded that owner/manager determines management accounting practices.
9. The high t-statistics showed how relevant this variable is in determining the level of management accounting practices.

The fourth objective was to ascertain the organizational performance of manufacturing firms in Kumasi Metropolis. The key findings were as follows:

1. Performance in this study was operationalized by six performance indicators, namely, level of productivity, product quality, number of deliveries on time, sales growth rate, operating profit growth rate and cash flow growth rate.
2. The data used to address this objective were analyzed through descriptive statistics. The level of performance of the respondents was estimated on a scale of 1 to 4. The mean value determined how high or low the performances of the respondents were. On the mean interval scale, the cut-off mean was 2.5. Therefore any mean score greater or equal to 2.5 was considered high but below the cut-off means the performance was low.
3. The overall performance for all the performance indicators was represented by the grand mean. The grand mean was very high. Thus, collectively the respondents had high level of performance.

4. The first performance indicator chosen in this study was level of productivity. Respondents generally believed that their productivity levels were high as depicted by the high mean score. This was the highest score among the scores of all performance indicators used in this study. This may suggest that the respondents were objective.
5. Although product quality did not score the highest mean, it was revealed that its mean score was higher than the cut-off mean. Thus, the respondents produce high product quality to their customers.
6. The respondents generally agreed that their customers' delivery schedules were often met. Thus, the numbers of time deliveries are met based on the agreed date were relatively good.
7. The fourth performance indicator assessed was sales growth. The study revealed high level of sales growth among the respondents. It was concluded that the sampled firms have high sales performance.
8. Operational profit as performance indicator was relatively high. The study included cash flow growth as the last performance assessor. This indicator assessed the liquidity health of the manufacturing firms within the sample. It was evident that the mean statistic for cash flow rate was significant. This means that the liquidity position of the respondents was high.

The final objective was to examine the relationship between management accounting practices and organizational performance of manufacturing firms in Ghana. The overall score of organizational performance was regressed on each of the management accounting practice indicators used in this study.



Standard multiple regression technique was used to examine the relationship.

The major findings were as follows:

1. The assessment was based on the R-square ( $R^2$ ), co-efficient of the variables and their corresponding significance levels (p-values) and the t-statistics. The  $R^2$  and the adjusted  $R^2$  were relatively good indicating that the fitness of the model used.
2. The  $F$ -test for the null hypothesis that none of the explanatory variables are related to organizational performance, or in other words, that  $R^2$  is zero. The results clearly rejected this null hypothesis ( $F$  and so concluded that at least one of the management accounting practices relate to organizational performance.
3. It was found that all the five dimensions of management accounting practices contributed uniquely to explaining variances in organizational performance.
4. Budgetary system made the most significant contribution to organizational performance while non-financial performance evaluation techniques contributed the least. The other remaining dimensions contributed significantly to the variance in organizational performance.
5. The coefficient for costing system was significant which means that a percentage increase in the extent to which the respondents apply costing techniques will lead to an increase in organizational performance and vice-versa holding other variables constant. Therefore to enhance performance, management strategies and policies should aim at improving the costing system.

6. The coefficient for financial performance evaluation technique was significant. This suggested that 1 percent improvement in the extent of applying financial performance valuation technique will generate additional increase in organizational performance and vice-versa. Similarly, it was discovered that strategic management accounting had significant effect on organizational performance.

### **Conclusions**

Based on the results of the study the following conclusions could be drawn. The from the findings under the first specific objective, it was concluded that costing system, budgetary system, performance evaluation system and strategic management accounting are the key management accounting practices adopted by manufacturing firms within Kumasi metropolis.

Furthermore, the conclusion from the key findings from the objective two was that manufacturing firms in Kumasi enjoyed high benefits from adoption of management accounting practices. It was also concluded that the major benefits include planning the future strategies, tactics and operations, controlling current activities, measuring and evaluating performance, optimizing the use of firm's resources, reducing subjectivity in the decision making process and improving internal and external communication.

Regarding the third specific objective which focused on the determinants of management accounting practice, it was concluded that management accounting practices are determined by key external and internal forces or contingencies. Another conclusion was that the introduction of management accounting practice in the manufacturing firms is determined by

market competition, characteristics of the accounting staff, owner/manager participation and changes in technology.

It was concluded from the fourth specific objective that the manufacturing firms in Kumasi enjoy relative good performance. It was also concluded that the subjective performance indicators such as level of productivity, product quality, number of deliveries on time, sales growth rate, operating profit growth rate and cash flow growth rate were relatively high.

Finally, it was concluded that the level of management accounting practices positively affect organizational performance. In specific sense, it is concluded that costing system, budgetary system, performance evaluation system and strategic management accounting positively affect performance of manufacturing firms in Kumasi metropolis. Furthermore, it was concluded that when management of manufacturing firms step up the application of management accounting practice, performance would be enhanced.

### **Recommendations**

Based on the key findings and the various conclusions drawn the following recommendations are made:

The Association of Ghana Industries (AGI) is advised to:

1. Periodically organize seminars and trainings to continually encourage its players-manufacturing firms to effectively design and implement management accounting systems. This recommendation is important as the findings under the fifth specific objective revealed that management accounting practices have significant positive influence

on the level of organisational performance, therefore encouraging players through training and seminars would improve the performance.

2. Encourage managers and owners within the manufacturing sector to participate actively in the implementation management accounting systems as this would enhance the extent of management accounting practice. This recommendation is based on the results found under the objective three of the study which sought find the determinants of management accounting practice. The findings indicated that participation of owners and managers in the implementation of management accounting systems has significant effect on the extent of management accounting practice which also influences performance.

Manufacturing firms are encouraged to:

1. Design their management accounting system to include costing system, budgetary controls, application of performance evaluation techniques and strategic management accounting issues as they contribute significant to organizational performance. These were evident in the results and conclusions drawn from the positive effect of these management accounting systems on organisational performance on the fifth specific objective of study.
2. Continually review their management accounting practices to assess their effectiveness and address any known inefficiency as they have direct bearings on the performance and also employ experts to help them in this regard. This suggestion is based on the contingencies found as determinant of management accounting practice under the specific objective three. It was found that management accounting

practices should be aligned with factors such as marketing conditions such as competitions and changes in technologies. Therefore, continuous review is important to meet current contingencies.

3. Assess the decision making tools of management accounting systems so as to reduce subjectivity in decisions about organisational performance and changes in organisational structure including new technology. This is important because introduction of new technology would have influence on management accounting system and ultimately performance as found under the objective three and five. Therefore, the existing management accounting tools should be assessed and align with such intended decisions to avoid mismatch.

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**APPENDIX**  
**UNIVERSITY OF CAPE COAST**  
**DEPARTMENT OF ACCOUNTING AND FINANCE**

**Questionnaire on Management Accounting Practices and  
Performance of Manufacturing Firms in the Kumasi Metropolis**

This questionnaire is being used to provide information for a study on the management accounting practices of manufacturing firms in the Kumasi Metropolis in partial fulfilment of the requirement of MCOM Accounting Programme at the University of Cape Coast. Your reply to the survey will be strictly confidential and for academic purpose only. Thank you.

**SECTION A: This section seeks general information about your organization.**

1. Name and address of company (optional) .....
2. Current job title of respondent .....
3. What is the ownership structure of your organization?  
Sole Proprietorship  Partnership   
Public Company  Private Company
4. How many employees are there in your organization? .....
  - a. How many are fulltime employees? .....
  - b. How many are part time employees? .....
5. How many years has your company been operating?  
Less than 3 years  3-10 years  11-20 years  More than 20 years
6. Please tick any of the boxes below to indicate your company's main industrial sector:  
Food, water and beverage  Engineering and electric   
Chemical and chemical products  Cement and Building Materials   
Oil, Gas and mining  Textiles, Furniture and Paper   
Metal, Machinery and Equipment  Toiletries and cosmetics   
Rubber and plastic  Pharmaceutical   
Other (Please specify) .....

7. Please indicate the approximate annual sales turnover of your company:

- Less than GH¢50,000  GH¢100,000 – GH¢500,000   
GH¢50,000 – GH¢100,000  GH¢ 500,000 - GH¢1million   
GH¢1million - GH¢10 million  GH¢10 million - GH¢100 million   
More than GH¢100 million

**SECTION B: This section seeks information on the management accounting practices in your firm over the past three years.**

**Part A: Costing System**

8. Which of the following product costing procedures do you use in your firm? Tick as many as applicable.

- Job Costing  Batch Costing   
Contract Costing  Process Costing

9. Which the following costing systems are used in your firm? Tick as many as applicable.

- Absorption Costing  Variable Costing   
Activity Based Costing (ABC)

**Part B: Budgeting System**

10. Please indicate which budgets are prepared in your firm.

- Sales Budget  Purchases Budget   
Production Budget  Cash Budget   
Financial Position Budget

11. How often do you prepare budgets in your firm?

- Weekly  Monthly   
Quarterly  Yearly

12. Which of the following budgeting types are employed in your organization?

- Flexible Budget  Incremental Budget   
Static Budgeting  Zero – Based Budgeting



**Part C: Performance evaluation system**

13. Which the following measures of performance evaluation are used in your firm.

**Financial measures**

- |                   |                          |                      |                          |
|-------------------|--------------------------|----------------------|--------------------------|
| Operating income  | <input type="checkbox"/> | Return on investment | <input type="checkbox"/> |
| Variance analysis | <input type="checkbox"/> | Sales growth         | <input type="checkbox"/> |
| Cash flows        | <input type="checkbox"/> |                      |                          |

**Non-financial measures**

- |                                 |                          |
|---------------------------------|--------------------------|
| Survey of customer satisfaction | <input type="checkbox"/> |
| On – time delivery              | <input type="checkbox"/> |
| Other (Please Specify) .....    | <input type="checkbox"/> |

**Part D: Strategic Management Accounting**

14. Which of the following strategic practices are employed in your organization? Tick as many as apply.

- a. An analysis of costs that occur across stages of a product development
- b. Taking into account any strategic factors when setting price decision.   
(example costs of installation, operation, support, maintenance and disposal)
- c. The systematic collection of data on competitors’ price reaction, demand reaction, and market position?
- d. Monitoring the costs that occur across stages of product develop   
(example costs of installation, operation, support, maintenance and disposal)

**SECTION C: The benefits of management accounting practices in your firm.**

Using the scale of 1 to 4 below, please indicate the benefits of management accounting practices in your firm over the past three years.

- (1) Strongly Disagree                      (3) Agree  
 (2) Disagree                                      (4) Strongly Agree

<b>15.</b> Management accounting practices have influenced your firm in the following areas:	1	2	3	4
Planning the future strategies, tactics and operations				
Controlling current activities				
Measuring and evaluating performance				
Optimizing the use of firms resources				
Reducing subjectivity in the decision making process				
Improving internal and external communication				

**SECTION D: Factors which affect the extent of use of management accounting practices**

**Part A: Market Competition**

Please choose your response on a scale of 1 to 4 to answer question 16.  
 Please circle the appropriate number to indicate your response.

<b>16.</b> There is an intense competition for the firm's main product/product lines.	Strongly Disagree	Disagree	Agree	Strongly Agree
	1	2	3	4

**Part B: Accounting staff**

- 17.** How many employees are there in your accounting department?.....  
     **a.** How many of them are full time employees?.....  
     **b.** How many are part time employees?.....
- 18.** How many management accountants are there in your organization?.....

19. Please indicate the highest qualifications of the head of the accounting or finance section in your organization. ....
20. How many years of work experience does he or she have in accounting / finance? ..... years.

**Part C: Owner/manager participation**

Please choose your response on a scale of 1 to 4 to answer question 21.

Please circle the appropriate number to indicate your response.

21. The owner or manager of your organization participates in the development of management accounting practices for your firm.	Strongly Disagree	Disagree	Agree	Strongly Agree
	1	2	3	4

**Part D: Changes in Technology**

22. Please indicate the number of unique products produced by your company.  
 0-5  5-10  10-15  15-20  20 and above
23. Please indicate the level of manufacturing process automation in your company  
 100 percent manual  Less than 50% automated   
 More than 50% automated  100% automated

Please circle the appropriate the number to indicate your response using a scale of 1 to 4.

24. Your firm adapts to changes in technology in the industry quickly and easily.	Strongly Disagree	Disagree	Agree	Strongly Agree
	1	2	3	4

**SECTION D: Performance of the firm**

Please use the following scale for question 25.

Decreased significantly	Decreased	Increased	Increased significantly
1	2	3	4

Please tick your response in the appropriate box according to the scale provided above.

25. How do you assess the performance of your firm over the past three years using the following indicators?	1	2	3	4
Level of productivity				
Product quality				
Number of deliveries on time				
Sales growth rate				
Operating profit growth rate				
Cash flow growth rate				

Thank you very much for your participation.