UNIVERSITY OF EDUCATION, WINNEBA

ACTIVITY-BASED COSTING PRACTICES IN SELECTED FOOD MANUFACTURING FIRMS IN TEMA METROPOLIS

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DECLARATION

STUDENT'S DECLARATION

I, **Hollack Obeng**, declare that, this dissertation with the exception of quotations and references contained in published works which have all been identified and duly acknowledged, is entirely my own original work, and it has not been submitted, either in part or whole, for another degree elsewhere.

SIGNATURE:……

DATE:……..

SUPERVISOR'S DECLARATION

I hereby declare that the preparation and presentation of this work was supervised in accordance with guidelines for supervision of dissertation as laid down by the University of Education, Winneba.

SUPERVISOR"S NAME: **Mr. Alfred Morrison**

SIGNATURE:……...……

DATE:…….....…….

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DEDICATION

This project work is dedicated to Almighty God who is my constant caretaker and keeper. Again I dedicate this work to my father Mr. Obeng George who inspires me to give off my best and to all the following wonderful people; Mr. Alfred Morrison (supervisor), Mr. Peter Amoah (Counsellor) who have immensely contributed towards making this a success.

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ABSTRACT

Adherents of ABC systems claimed traditional management accounting systems generated misleading costs in a contemporary, tumultuous, often changing business environment and implementing ABC would remedy this. That is why activity-based costing (ABC) represents the symbol of improved competitiveness and efficiency in every organization. The purpose of this study analyzing the existing literature in the field – is to emphasize that new cost system such as ABC could be a strong couple that assures competitiveness and efficiency for each company. Another objective is to present that, besides its disadvantages, firms implement the ABC system because it permits better tracing of costs to objects, superior allocation of overheads to cost objects, financial and non-financial analysis and measures useful to managers and management accountants in the decision making process. The objective of the study it to access activity-based costing practices in selected food manufacturing firms in Tema metropolis. Data collection presents the type of data, source of data, instrument for data collection, instrument validity, and instrument structure to meet the research objectives and procedure for data collection. Thereafter, data collected was analyzed using the Statistical Package for Social Science (SPSS) to help in explaining further the responses of the respondents in relation to the study. In summary the analysis of data from respondents, it revealed that even though Activity- Based Costing is of great benefit to its implementers, it also has its own difficulties as well. The most important motive for implementing or considering ABC as well as its benefits are that it provides insight into cost causation which helps in cost reduction and control. The benefits of Activity- Based Costing should be made known to other firms to encourage them to use it too.

CHAPTER ONE

INTRODUCTION

1.0 Introduction

Any organization determined to thrive in the present-day turbulent and dynamic business environment must plan strategically. Management must be proactive, set realistic objectives and develop strategic plans of action in the reduction of cost in its manufacturing activities. The fundamental issue is taking decisions by examining various options or scenarios available to the company and responding quickly to opportunities in the environment. From all strategies, consisting of objectives and goals, to the reduction of cost can be condensed to one sentence; what gets measured gets done (Kelly, 2000).

As the years have evolved with new ways and forms of conducting business activities, there has been a rather great evolution amongst firms. In wanting to compete successfully, companies have changed the ways they report and manage costs. This means replacing old institutions of cost accounting and inventory valuation in day to day business management. This has made the traditional way of cost accounting to be criticized for cost misrepresentation and the lack of relevance during the last 20 years (Johnson and Kaplan, 1987). A new costing method, Activity- Based Costing (ABC), was developed and this has been advocated as a means of overcoming the systematic misrepresentations of traditional cost accounting and for bringing relevance back to managerial accounting (Miller, 1996).

In today‟s competitive and continually changing business environment, advancements in manufacturing have drastically changed the ways businesses conduct their activities. Adoption of advanced manufacturing technologies such as robotics and computerized manufacturing have resulted in significant changes in the manufacturing cost structure which have led academics and practitioners to argue that the traditional costing methods are no longer sufficient within this new manufacturing environment (Johnson and Kaplan, 1987). This had resulted in the change from the traditional volume- based cost model to new costing methods such as Activity-Based Costing (ABC). Due to its ability in providing more accurate costing information and enhancing firms‟ performance, becoming more and more popular.

ABC aims at providing accurate costing information to managers to allocate activity costs to products and services by applying cost drivers (Banker, *et al.* 2008). Academics who advocate ABC, such as, Cooper and Kaplan (1991), and Swenson (1995) argue that it provides a more accurate source of cost data needed to make appropriate strategic decisions about product mix, sourcing, pricing, process improvement, and evaluation of business process performance. These claims have led many firms to adopt ABC systems (Banker, *et al.* 2008).

1.1 Statement of the Problem

The relevance of the traditional volume- based cost allocation practices in today‟s manufacturing environment has been questioned and strongly criticized by accounting academicians, practitioners, and consultants. They argue that traditional cost allocation practices are simplistic and subjective, and that allocations do not reflect the pattern of

cost relationships in firms using advanced manufacturing technologies (Kaplan, 1986). Thus, the traditional volume-based cost allocation practices distort cost and profit and mislead management (Swenson, 1995).

To overcome such deficiencies and to provide more accurate information for management planning and control, Activity- Based Costing (ABC) was proposed as an approach to solve the problems of traditional cost management systems to identify the cause and effect relationships to objectively assign cost (Miller, 1996). Once costs of the activities have been identified, the cost of each activity is attributed to each product to the extent that the product uses the activity. In this way ABC often identifies areas of high overhead costs per unit and so directs attention to finding ways to reduce the costs or to charge more for costly products (Cooper and Kaplan, 1988). Hence, the researcher seeks to find out the Activity- Based Costing practices of some selected manufacturing firms in Tema.

1.2 Objectives of the Study

The objectives of this research are to:

1. identify the manufacturing firms in Tema that use Activity- Based Costing.
2. ascertain the factors that motivated the selected manufacturing firms to implement Activity- Based Costing system.
3. determine the challenges associated with Activity- Based Costing in the selected manufacturing firms in Tema.

4. Determine the benefits derived from Activity- Based Costing in the selected manufacturing firms in Tema.

1.3 Research Questions

1. Which manufacturing firms are using Activity based costing?
2. What factors or reasons that motivated the selected manufacturing firms to implement ABC systems?
3. What are the challenges associated with Activity- Based Costing in manufacturing firms in Tema?
4. What are the benefits derived from Activity- Based Costing in manufacturing firms in Tema?

1.4 Significance of the Study

This study would help Ghana establish an increase in economic benefits such as rise in the country‟s gross domestic product through firms that use Activity- Based Costing in production activities. This is because in the implementation of ABC, firms are able to reduce their cost of production thus causing a relative increase in sales. As a result, their tax liability increases giving a rise in government revenue thereby increasing the nations GDP.

Again, manufacturing firms would know the value of proper implementation of Activity-Based Costing and its benefits to firms, its business partners, and to consumers at large. It will help the food manufacturing to know the difference between the traditional cost and

the ABC, and enable them to know the clear cost savings derived from ABC, hence improving profit. It will also serve as a point of reference to students and other professionals who are yet to undertake research related to Activity- Based Costing or costing systems in Ghana or the world at large.

1.5 Scope and Limitations of the Study

This study focuses on Activity– Based Costing in Food manufacturing firms in Tema. This is because of its rising impact on production with the ability of providing more accurate costing information and enhancing Food manufacturing firms‟ long and short term performance.

The research is based on food manufacturing firms since most firms undergo several processes or activities in ascertaining cost of particular products. These may include assigning the cost of each activity with resources to all products and services according to their actual consumption by each, and also spreading indirect costs (overhead) into direct costs. Finally, the research is conducted in Tema relatively because most food manufacturing firms in Ghana have their head offices in Tema.

1.6 Organisation of the Study

The study is in five chapters. This current chapter discusses the background, statement of the problem, objectives, research questions, justification, limitations and research methodology of the study. Chapter two undertakes a review of literature. This provides an overview of the theoretical foundation that provides the underpinnings for the study

concerning an overview of (ABC). Chapter three deliberates on the methodology used for the study. Chapter four presents and discusses the empirical results of the study. In chapter five, the summary, conclusions and recommendations of the study are provided. Besides, limitations of the study are made for future research.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

The ABC concept was designed as a method which eliminates the shortages of the traditionally used absorption costing methods. Traditional costing techniques were used for the purposes of overhead cost allocation during the 20th century. These were based on simplified procedures using principles of averages. In recent decades, such conventional concepts have become obsolete due to two major phenomena. The first of these is ever increasing competition in the marketplace, the necessity to reduce costs and the effect of having more detailed information on company costs.

Second, there has been a change in the cost structure of companies. In terms of the majority of overhead costs, traditional allocation concepts, as they are based on overhead absorption rates, can often provide incorrect information on product costs (International Review of Business Research Papers Vol.6, No.1 February 2010).

Activity based costing is an accounting method that identifies all activities and the costs associated with these activities; it then assigns the cost associated with the activity directly to the pricing of the output of that activity, rather than averaging the cost across all outputs (Proctor, 2009). It allows an organization to determine the actual cost associated with each product and service produced by the organization without regard to the organizational structure. It is developed to provide more accurate ways of assigning

the costs of indirect and support resources to activities, business processes, products, services and customers.

Traditionally cost accountants had arbitrarily added a broad percentage of analysis into the indirect cost allocation. However, as the percentages of indirect or overhead costs rose, this technique became increasingly inaccurate, because indirect costs were not triggered equally by all products. For example, one product might take more time in one expensive machine than another product but since the amount of direct labour and materials might be the same, additional cost for use of the machine is not being recognized when the same broad 'on-cost' percentage is added to all products. Consequently, when multiple products share common costs, there is a danger of one product subsidizing another (Popesko, 2010).

The concepts of Activity- Based Costing were developed in the manufacturing sector of the United States during the 1970‟s and 1980‟s based on George Staubus' Activity Costing and Input-Output Accounting (1971). During this time, the Consortium for Advanced Management-International (CAM-I), provided a formative role for studying and formalizing the principles that have become more formally known as Activity-Based Costing. (Cooper and Kaplan, 1988) proponents of the Balanced Scorecard, brought notice to these concepts in a number of articles published in Harvard Business Review beginning in 1988. They described ABC as an approach to solve the problems of traditional cost management systems. These traditional costing systems are often unable to determine accurately the actual costs of production and of the costs of related services.

Consequently managers were making decisions based on inaccurate data especially where there are multiple products (Popesko, 2010).

Instead of using broad arbitrary percentages to allocate costs, ABC seeks to identify cause and effect relationships to objectively assign costs. Once costs of the activities have been identified, the cost of each activity is attributed to each product to the extent that the product uses the activity. In this way ABC often identifies areas of high overhead costs per unit and so directs attention to finding ways to reduce the costs or to charge more for costly products (Cooper and Kaplan, 1988).

Activity- Based Costing was clearly defined first by Kaplan and Bruns (1987) as "A Field Study Perspective." They initially focused on manufacturing industry where increasing technology and productivity improvements have reduced the relative proportion of the direct costs of labour and materials, but have increased relative proportion of indirect costs. For example, increased automation has reduced labour, which is a direct cost, but has increased depreciation, which is an indirect cost. Like manufacturing industries, financial institutions have diverse products and customers, which can cause cross-product, cross-customer subsidies. Since personnel expenses represent the largest single component of non- interest expense in financial institutions, these costs must also be attributed more accurately to products and customers. Activity-based costing, even though originally developed for manufacturing, may even be a more useful tool for doing this (Sapp, *et al.*1990). In general terms, Activity- Based Costing records the cost that traditional cost accounting does not do.

2.1 Activity- Based Costing Practices in Manufacturing Organizations

ABC activities have been around for nearly 20 years and many companies in a variety of sectors have implemented activity based thinking. With Activity- Based Costing having brought about essential changes in the cost management systems, many firms tend to adopt its usage. In recent years, manufacturing has become global and hence the competition is high among manufacturing industries to offer quality goods and services at competitive prices. This competition has led companies to adopt manufacturing concepts such as ABC to reduce the time taken to reach markets with suitable products that enhance the income (Popesko, 2010).

The nature of current manufacturing environments is more capital intensive compared to the labour intensive traditional manufacturing situation. Therefore, Traditional Costing Systems (TCS) focusing more on labour productivity may not be applicable for the present day manufacturing organization (Park and Kim, 1995). ABC has been defined as a method of measuring costs and performances of activities, products, and customers (Popesko, 2010). In product costing applications, ABC allows costs to be apportioned to products by the actual activities and resources consumed in producing, marketing, selling, delivering and after sales services of the product. Thus, ABC recognizes the interdependencies of cost drivers to activities (Park and Kim, 1995).

In manufacturing firms, costs in an ABC system are assigned to products using bases (cost drivers) that capture the underlying behavior of the costs that are being assigned. ABC focuses on the activities performed to produce the products throughout the

manufacturing process. In addition, costs are traced to these activities by keys called cost drivers (Cooper, 1990). The ultimate goal of ABC as a cost allocation system is to trace the production costs generated by the production of a good or service, as accurate as desired, to the causing activities. The Activity- Based Costing practices in manufacturing organizations in designing an ABC system take the following steps (Miller, 1992): Identifying the major activities and cost objects within the ABC model, Assigning costs to activities, Calculating the primary rates of individual activities.

2.1.1 Identifying the major activities and cost objects within the ABC model

Many authors like Drury (2001) and Glad and Becker (1996), consider the definition of activities as the starting point of an ABC implementation process. Creating a single definition for activities without the cost objects being defined as well will be insufficient for successful implementation. The structure of activities can be related to the cost object structure because different data are processed and various outputs are desired of the individual cost objects. Consequently, it is necessary to split this phase of ABC implementation into two coherent sections: i.e. defining activities and defining cost objects.

2.1.1.1 Activity definition

Activities form the basis of measurement of all relevant information in an ABC system. Therefore, it is imperative to define the activity at the right level of detail. Too much will cause information overload and too little may lead to insufficient information being available for analysis.

Several procedures defining activities may be used. Some of them include:

1. Analysis of the organizational structure of an enterprise; that is, analysing the hierarchical framework within which the organization arranges its lines of authority and communication determining the manner and extent to which roles, power, and responsibilities are delegated not leaving out how information flows between levels of management.
2. Analysis of the workplace; that is analysing the facilities or establishments of an organization concerning its location or work area.
3. Analysis of personnel costs; analysing the cost per the amount of work to be done by an employee or machine in carrying out their definite duties, especially in a specified frame of time. (Drury, 2001)

Applying all the three ensures that no activity is overlooked. Moreover, several important guidelines relating to an activity‟s definition can be composed as follows (Popesko, 2010):

1. Every defined activity should be related to a relevant cost pool; the objective of activity definition is not to conduct process analysis, but to set up the costing system
2. Actions and tasks performed within an activity should be precisely described to avoid any misunderstanding in later stages of application
3. A code number may be allotted to all individual activities for easier processing
4. It is suitable to define the appropriate number of activities, totalling between 20 to 30

Activities defined within the ABC system are classifiable as either primary or secondary (support) activities. Primary activities might relate to actions which the organization performs to satisfy external demands, while secondary refers to those performed to serve the needs of internal "customers" (Porter, 1985).

The Porter model could prove useful as a framework for an activity structure especially suited to manufacturing industries. Porter (1985) classified the full value chain as nine interrelated primary and secondary activities. These activities are then further delineated into primary activities that add value to the product from a customer point of view, and support or secondary activities, which ensure the efficient performance of the primary activities Porter(1985) and Glad and Becker (1996). Even though Porter"s model has received criticism for its tight focus on operational activities and for neglecting innovation and service processes, its foundation proves very suitable for the construction of a company costing system (Popesko and Novák 2008). The activities identified might also be collated within aggregate processes, which could relate to specific cost objects.

2.1.1.2 Cost object definition

Traditional costing methods normally utilize a single cost object, a product or service. However, an effective and accurate costing system has to incorporate multiple cost objects. Distinct products and services usually comprise the most frequently used cost objects. In reality though, it is possible to discern a much wider spectrum of cost objects. Using multiple cost objects makes costing systems far more complex, but this principle is an important requirement for accuracy (Popesko, 2010). How can one allocate the costs

of a sales department right down to product level when the inputs consumed by each customer served by the department may vary widely, even if only one type of product is produced?

The structures of both activities and cost objects are very closely tied. This is why defining activities and cost objects in one phase of implementation proved efficient. The close bonds between an activity and a cost object‟s structure is also upheld by traditional classifications of activities where every category of activity is related to a different cost object. The activities are classified as (Kaplan and Cooper, 1998):

1. Unit level activities which are performed each time a unit of a product or service is produced
2. Batch level activities which are performed each time a batch of goods is produced
3. Product sustaining activities which are performed to enable individual products to be produced and sold Customer sustaining activities, which are performed each time a customer is served in situations where the customer forms the cost object
4. Facility, sustaining activities, which are performed to support a facility‟s general manufacturing process; these include administrative staff, plant management, and property costs.

2.1.2 Assigning costs to activities

Assigning costs to activities represents the first stage of the allocation process within the ABC system. Firstly, not all company costs will be allotted to the activities defined. Company costs could be classified according to their nature under (Drury, 2001):

1. Direct traceable costs – those allocated directly to a cost object using the same principles as traditional costing methods
2. Activity- traceable costs – those allocated to identified activities
3. Non-traceable costs (or unallocated costs), which could be allocated to a cost object in proportion to other costs, or may be covered by a small increase in the target margin.

The allocation of cost to defined activities might prove very complicated in practice and eventually take up an important amount of the implementation process time. The reason is that the structure of activities and structure of a company‟s department usually clash somehow. The activity cost matrix could be invaluable for assigning company costs classified in company cost centres to activities. Very often it is necessary to define a resource cost driver in order to effectively allocate such costs. Resource cost drivers help to assign costs to a specific activity, when the cost in evidence is aggregated in general book entries. The following resource cost drivers were used in the case studies (Drury, 2001):

1. Personnel workload – for allocating personnel costs to activities
2. Square meters – for allocating rent, premises depreciation, heating, and indirect electricity to activities
3. The quantity of machines, tools, etc.
4. Estimation

2.1.3 Calculating the primary rates of individual activities

Calculating the primary rates of individual activities can be conducted in four steps (Drury, 2001):

1. Setting appropriate activity cost drivers for individual activities
2. Determining the output measures of individual activities
3. Calculating the primary rates of individual activities
4. Assigning the costs of support activities to primary activities
5. Calculating the costs of defined cost objects

2.1.3.1 Setting appropriate activity cost drivers for individual activities

Activity cost drivers (ACD) can be defined as the factors of transactions that are significant determiners of costs (Drury 1989). Activity cost drivers should generate data about which factor causes the occurrence of the individual types of overhead costs gathered within an activity. According to Drury (2001), ACDs consist of three types as follows:

1. Transaction drivers (number of transactions)
2. Duration drivers (amount of time required to perform an activity)
3. Intensity drivers (direct charge of consumed resources to activities)

The ACDs defined for a manufacturer may potentially resemble the allocation bases utilized by traditional absorption costing, particularly for manufacturing activities where duration drivers are used. However, should a large portion of direct costs and those of manufacturing activity exist, the use of the ABC system solely for the purposes of quantifying costs of product cost objects might not be efficient.

A highly important requirement for a defined cost driver is the ability of an enterprise to measure the driver and quantify its output measure. If the quantity of a cost driver consumed by an enterprise and individual cost object cannot be gauged, such a cost driver cannot be used for cost allocation purposes. Occasionally, a cost driver might take the form of a determiner of cost variability. This means that if a company performs a lower number of activity units, the total costs of an activity will change. In such instances, regression and correlation analysis may be used to determine an appropriate activity cost driver. Nevertheless, it is far more common for activity costs to be largely fixed in character. Under these `circumstances, a cost driver is simply a gauge of cost allocation.

2.1.3.2 Determining output measures of individual activities

The next step in the ABC implementation process is to determine the output measures of individual activities. These represent the number of activity units consumed during a specific period. In fact, an output measure determines activity capacity and is used to work out activity unit costs. The most significant provision governing activity capacity measurement is that of setting the correct activity capacity, this capacity being determined by the level of its denominator. These denominator levels are frequently applied in manufacturing operations where capacity can be technically and very precisely measured. In the case of overhead activity measurement, the setting of appropriate denominator levels could prove more complicated because overhead activities usually do not have technical parameters that might easily be gauged. The capacity of overhead

activities is usually measured by working out the number of output measures within a cost period (Drury, 2001).

Output measures, in the ABC system are used to determine the recovery rate of each cost pool. Two alternatives exist for this purpose (Glad and Becker, 1996) actual output, which uses the actual output of a particular output measure, and maximum capacity, which sets the constant capacity level for each activity. Generally, calculating activity recovery rates based on actual output could prove easier to perform since no maximum capacity determination is necessary. Calculations based on the maximum capacity are more accurate and provide for greater possibilities of utilization, e.g. capacity purposes. The challenge is to work out how to set the maximum capacity of overhead activities.

2.1.3.3 Calculating the primary rates of individual activities

Activity capacity output measures are used for quantifying activity unit costs, the rate for which is calculated is as follows:

1. Activity Cost per unit = $\frac{\text{Activity Cost}}{\text{Output measure capacity}}$

Activity cost per unit, also called primary rates could then be used in the ensuing stages of ABC implementation as important measurements which could be analysed.

2.1.3.4 Assigning the costs of support activities to primary activities

Following the calculation of primary rates, the next thing to do is to allocate secondary activities to primary ones. It is possible to solve all of the problems relating to secondary

activity costs if the amount of secondary cost driver units can be quantified. These are consumed by individual primary activities, such as the number of employees, SAP licenses and square meters being consumed by a primary activity like „Quality Control". The costs of secondary activities are then allocated to primary activities using the output measures of secondary activities, thereby calculating the secondary activity costs of primary activities (Jacob, *et al*. 1993). Total primary activity costs are then worked out by combining the primary activity cost (cost pool) plus secondary activity costs (costs of secondary activities allotted to a primary activity). An identical calculation can also be performed for activity unit costs, where the unit costs of an activity (combined rate) are equal to the sum of primary activity unit costs (primary rate) plus the unit costs of secondary activities consumed by a primary activity (Secondary rate):

2. Total Activity Costs = Primary activity costs + secondary costs of primary activity
3. Unit Costs of Activity (combined rate) = Primary activity costs (primary rate) + secondary unit costs consumed by primary activity (secondary rate)

The difficulty lies in the fact that these secondary activities and their output measures are not solely consumed by primary activities but other secondary activities, as well as by these activities themselves. This problem has also been discussed by some authors (Jacob,*et al*. 1993).

2.1.3.5 Calculating the costs of defined cost objects

The final stage of ABC calculation involves working out the costs of defined cost objects. The objective of this phase is to quantify the number of activity units consumed by individual cost objects. This calculation is performed on a bill of activities. This is a

description of the "journey" a product (or another cost object) that is made through the various activities en route towards completion. It is of great importance to accurately work out the multiple cost drivers concerned and to construct an intelligible costing statement for different types of users (Popesko, 2010).

2.2 Activity- Based Costing and Organizational Performance

Every organization faces a different operating environment that must be evaluated carefully through the strategic planning process. The Institute of Management Accountants in 2000 recommended that cost control systems incorporate and support the overall strategic goals of a company. One important organizational goal is to improve performance.

Research has shown that ABC can provide benefits to organizations; however, competing priorities may leave organizations with minimal performance improvements (Innes, *et al*. 2000). Additional studies have found out that ABC has only an indirect relationship with organizational performance (Kennedy and Affleck-Graves, 2001; Shields, *et al*. 2000). Empirical research in managerial accounting provides the link between management accounting systems such as ABC and organizational performance.

The basic role of ABC is to provide management with detailed information for decision making so that management can better streamline processes, eliminate waste, and reduce costs (Krumwiede and Charles, 2006). The basic assumption is that ABC enhancements will lead to improvements in performance. ABC organizational leaders believe that ABC

will only create value when the detailed information is utilized to reduce costs and improve performance (Brimson, 2007). Kennedy and Affleck-Graves (2001) found out that organizations who have successfully adopted ABC tend to outperform non-adopting firms in the first three years.

Woodruff (1997) stated that an organization can use both internal and external strategic initiatives to gain a competitive advantage. Kaplan (1989) indicated that ABC can align the strategy and structure to create value and a competitive advantage by providing management with the analytical tools to guide decisions about products, processes, customers, and transactions. Porter (1980) identified three primary strategies that organizations can implement to achieve their strategic objectives which are cost leadership, differentiation, and focus. Porter (1985) also stated that most organizations seek either a cost leadership or a differentiation strategy to sustain a competitive advantage.

Notwithstanding, some manufacturing firms may lose its competitive advantage due to high quality costs, lower product quality, and long customer leading time, as well as manufacturing cycle time. ABC can be an effective tool to solve this problem and develop core competencies. According to Carolfi (1996), through the application of ABC, activities that produce poor quality can be analysed. Poor quality indicates that the costs of some aspects of processes should be reduced, and by using ABC, processes can be evaluated. Opportunities with greatest potential for improving quality, reducing cost and also efficiency and effectiveness of major activities or process, which could be used as

the standard for continuous improvement, could also be identified. And Carolfi (1996) also stressed that information supplied by ABC could assist companies to adapt to the constantly changing business environment and build up competitive advantages hence raising the organizations levels of performance.

Ittner, *et al.* (2002) carried out a study to examine the connection between ABC implementation and manufacturing performance. They adopted cost, quality and time as the indicators for manufacturing performance. The results showed that ABC implementation led to higher quality and a reduction in manufacturing cycle time and lead time. Even though the results did not present a significant relationship between cost reduction and ABC implementation, yet but they also propose that cost reduction can be attained through the improvements in cycle time and quality.

2.3 Importance of Activity- Based Costing in Manufacturing Organizations

Cokins (1999) reported that ABC is essential as companies are not aware of which activities comprise their output or how each activity‟s cost is consumed. For example, due to the technological change in manufacturing environments, traditional cost accounting is rapidly disappearing. Gurses (1999) found that in today‟s world, manufacturing companies are changing and becoming more information intensive, highly flexible, and immediately responsive to the customer expectations.

Bhimani and Gosselin (2002) reported that during the 1990‟s, organizations have been challenged to change their costing practices more specifically to adopt new cost

management innovations, such as Activity- Based Costing and the impact of these pressures seems to have varied from one organization to another. Campbell, *et al.* (1997) stated reasons that by implementing ABC appropriately, it can assist companies to close the gaps between the departments and support cross- functional decision making. Cokins (1999) further noted that ABC was developed as a practical solution for problems associated with traditional cost management.

According to Research Journal of Finance and Accounting Vol.6, No.4, 2015, the growing industrial complexity and product diversity have made the emergence of ABC system for growing firms. As a powerful tool for decision making purpose, the major advantages of ABC systems are discussed below:

1. ABC increased operational performance by allocating overhead costs based on the actual consumption of the resources by each activity.
2. ABC recognizes the interdependencies of cost drivers to activities.
3. It enables the management to see where the most important costs occur as well as what provides them.
4. Decisions about improving pricing, marketing, product designing and product mix can be made more efficiently by implementing an ABC system.
5. ABC system is among the most suitable method for correct and accurate information.
6. Redeploying a resource from a non value-added to a value-added activity.
7. By identifying the weak product lines and accurate costs, ABC helps to increase organizational efficiency and profitability.

8. Completely eliminating a non value-adding activity ABC can takeout costs.
9. Identifying and correcting an error that was not budgeted for but would have caused an expense had it not been corrected.
10. Provides Growth by removing a bottleneck that was causing a capacity constraint.
11. It helps industrial marketers in three ways; it results in cost estimates to use in pricing, guides industrial marketers to adjust in negotiations to yield significant cost reductions and indicates areas for change in operations to permit cost reductions that will allow the company to satisfy customer wishes better.

According to international journal of scientific & technology research volume 5, issue 6th June, 2016, benefits of Activity-based Costing (ABC) system for the management of the company are:

1. An assessment of the cost of the system ABC can convince management that they must take steps to become more competitive. As a result, they can strive to improve quality while focusing on cost reduction as the same time. This analysis could highlight how truly expensive manufacturing process, in turn can stimulate the activity of organizing process, improving quality, and reducing costs
2. The management being in a position to conduct competitive bidding is more reasonable
3. ABC system can assist in management decision making, make-buy that management should do. In addition to costing more accurately, the decision

will be taken by the management would get better and right. This is based on the accuracy of the calculation of the cost of products that has become very important in today's competitive climate.

4. Continuously supporting the improvement through the analysis of the activity, the ABC system allows the elimination or corrective action against non-value-added activities or less efficient. Which are closely related to the company's productivity problem
5. Easier to determine whether the costs are less relevant or not (cost reduction). In the traditional system, a lot of costs that are less relevant are hidden. ABC transparent system causes sources of these costs to be identified and eliminated.
6. With an improved cost analysis, management can make more accurate analysis of the production volumes needed to achieve breakeven on low volume products

2.4 Difficulties Associated with the Implementation of Activity- Based Costing Activities

The activity-based cost systems are superior to traditional costing systems and they could fail due to poor implementation process (Ness and Cucuzza, 1995). The most common problem reported was the difficulty in identifying the cost drivers. ABC is highly complex and may be difficult for firms to implement with accuracy; for some costs, such as upper management compensation, there is simply no way to identify an appropriate costing method, leaving some portion of expenses in the traditional by undifferentiated overhead bucket (Geri and Ronen, 2005).

ABC is long-term oriented. It traces the cost of resources used in production to products (Holmen, 1995). Under ABC, it is assumed that almost all of the costs are variable, so they change according to the output level. However, in the short run, there are many fixed costs such as the cost of labor, rent, equipment, etc. The company will incur these kinds of costs whether the product is produced or not. As a result, ABC may give wrong information about short-run decisions because of it not reflecting on the actual costs the company will incur in the short-run (Kaplan, 1989).

Roztocki (2000), found that despite ABC"s advantages in its implementation, it still fails to account for capital costs, investment risk and cash flow factor due to non-consideration of balance sheets. ABC tends to under-estimate the total product cost. Roztocki (2000) made it known that although it outperforms traditional methods in terms of its reliability and efficiency, it still disregards capital costs.

Finally, even though Activity based costing (ABC) is the perfect cure for the problem of overhead allocation within organizations and the assigning of cost associated with the activity directly to the pricing of the output of that activity, rather than averaging the cost across all outputs; there are some cases where firms that produce only one product might not see ABC as simply necessary. With that being the case, traditional costing is a more appropriate and simpler approach to overhead allocation (Proctor, 2009).

CHAPTER THREE

METHODOLOGY OF THE STUDY

3.0 Introduction

This chapter seeks to outline the philosophical assumptions underpinning this research and as well introduce the research strategy and the empirical techniques applied. The study seeks to assess activity-based Costing Practices in Selected Food Manufacturing Firms in Tema Metropolis. However, the validity and reliability of every research depends, to a large extent, the methodology that shall be employed for the study. The methodology for the research must therefore, be systematic, rigorous and unbiased. In order to guard against potential statistical errors, relevant and appropriate data collection instruments and models was applied to arrive at accurate results.

3.1 Research Design

Research design is a protocol that determines and influences the condition with ground rules with respect to the collection and analysis of data. The research assess the use of Activity-Based Costing in selected Food manufacturing companies in Tema. This is a fact finding exercise, thus, a case study is used and as such the survey method of data collection was employed to collect data of qualitative nature.

3.2 Population

The target population of the study was all food manufacturing firms registered in Tema between the periods 2010 - 2017. The firms selected are food manufacturing firms which use fruits and cereals in producing their product. This choice of population was basically

because most food manufacturing firms in Ghana have their Head Offices in Tema according to Ghanayello.com. According to Ghanayello.com, there 19 foods manufacturing companies in Tema.

3.3 Sample and Sampling Techniques

The sample size was fifteen (15) manufacturing firms in Tema. Fifteen was selected because between the periods 2010 – 2017 only 19 firms had been registered as per the information gotten from the Registrar General‟s department. The sample was selected based in Tema because of its proximity to the researcher. The respondents for this study were the finance directors, chief financial officers, and cost and management accountants from all the fifteen (15) selected manufacturing firms. The purposive sampling technique was used in selecting the respondents in each firm in the sample. This was because the respondents selected were considered to be the most appropriate persons to provide relevant data.

3.4 Source of Data

For the purpose of this study, primary data was collected from the sampled firms through the use of questionnaires which were collected personally from the respondents by the researcher. Data was collected by a personal visit to the respective firms where after permission was sorted, the questionnaire was administered, to enable respondents elicit their views on the subject.

The questionnaires, twenty (20) in number were then administered to the respondents who gave their views on the topic of study. These respondents were randomly selected from various positions in the selected companies .The estimated time for the collection of data was two weeks due to the busy schedule of their work.

3.5 Data Collection Procedure

Data collection presents the type of data, source of data, instrument for data collection, instrument validity, and instrument structure to meet the research objectives and procedure for data collection.

3.6 Instrument for Data Collection

Questionnaires were the main instruments used in collecting the data for the purpose of enhancing the accuracy of data regarding the study. The questionnaires contained relevant questions for the purpose of achieving the research objectives and addressing the research questions of this study.

3.7 Instrument Validity

In ensuring the validity of the instrument, the instrument was designed to address the objectives of the research using the research questions of the study. For the purpose of ensuring the effectiveness and the usefulness of the questions, the questionnaires were given to lecturers, who made a lot of inputs with regards to ambiguity and the relevance of the questions to meet the research objectives.

3.8 Instrument Structure to Meet Research Objectives

The questionnaire was structured into five sections based on the objectives of the study. Section A of the questions was designed to collect personal information of the respondents. Section B, C, D and E were rated between the ranges of 1-5 to gather information for the purpose of identifying the manufacturing firms that use Activity-Based Costing in Tema, ascertain the factors or reasons that motivate the selected manufacturing firms to implement Activity- Based Costing systems, and find out the challenges and benefits associated with Activity- Based Costing in manufacturing firms in Tema.

3.9 Methods of Data Analysis

For the purpose of this study, descriptive statistics used in the analysis of data collected. In determining the distribution of views of the respondents concerning the research questions which were in designing the questionnaire and describing them, frequencies and percentages were employed. Thereafter, data collected was analyzed using the Statistical Package for Social Science (SPSS) to help in explaining further the responses of the respondents in relation to the study.

CHAPTER FOUR

RESULTS AND DISCUSSIONS OF FINDINGS

4.0 Introduction

This chapter presents the data collected and the detailed analysis of information gathered during the study as well as in-depth interpretation of presented data.

4.1 General Information on Sampled firms

4.1.1 Demographic Data

The table below shows the various positions held by the respondents.

Table 4.1: Position Held by Respondents

Responses	Frequency	Percentage	Valid Percentge
Financial Director	4	20.0	20.0
Accountant	10	50.0	50.0
Cost & Management Accountant	6	30.0	30.0
Total	**20**	**100.0**	**100.0**

Source: Field Survey July 2017

Table 4.1shows that four (4) respondents representing 20.0% were Financial Directors while ten (10) respondents representing 50.0% were Accountants and six (6) respondents representing 30.0% were Cost & Management Accountants. Inferring from the table, it indicates that Accountants constituted the majority of the respondents.

Table 4.1.1 Number of Years worked

Responses	Frequency	Percentage	Valid Percentage
1-3	15	75.0	75.0
3-6	5	25.0	25.0
6-9	0	0.0	0.0
9-11	0	0.0	0.0
11 and above	0	0.0	0.0
Total	**20**	**100.0**	**100.0**

Source: Field Survey July 2017

From table 4.1.1, it is evident that the average number of year majority of the respondents have worked in their respective firms fall within a range of 1 to 3 years. It is illustrated as 15 out of 20 respondents representing 75%. The least number of years was between 3 to 6 years of workers working in the respective firm which is 5 out of 20 respondents representing 25%. It could therefore be inferred that, most of the respondents have worked in their respective firms between the 1 to 3 years.

Section B: The Use of Activity- Based Costing in the Organization

4.2 General Presentation of Data

Table 4.2: Identifies, defines, and classify activities

Responses	Frequency	Percentage	Valid Percentage
Strongly Agree	7	35.0	35.0
Agree	10	50.0	50.0
Neutral	3	15.0	15.0
Total	**20**	**100.0**	**100.0**

Source: Field Survey July 2017

From table 4.2, 7 out of 20 respondents representing 35% strongly agreed to the fact that they, 10 out of 20 respondents representing 50% agreed, 3 out of 20 respondents

representing 15% were neutral the view. From the data, it can be inferred that most food manufacturing firms identify, define, and classy activities as part of their food manufacturing processes in the cause of their operations.

Table 4.2.1 Assign the cost of resources to activities

Responses	Frequency	Percentage	Valid Percentage
Strongly Agree	5	25.0	25.0
Agree	11	55.0	55.0
Neutral	3	15.0	15.0
Disagree	1	5.0	5.0
Total	**20**	**100.0**	**100.0**

Source: Field Survey July 2017

Table 4.2.1 indicates 5 out of 20 respondents representing 25% of the respondents strongly agreed showing that firms assign the cost of resources to manufacturing activities. 11 out of 20 respondents representing 55% agreed while 3 respondents representing 15% were neutral. 1 respondent representing 5% disagreed to the point. This indicates that, the majority of food manufacturing firms assign the cost of resources to manufacturing activities.

Table 4.2.2 Trace overhead costs to activities

Responses	Frequency	Percentage	Valid Percentage
Strongly Agree	7	35.0	35.0
Agree	10	50.0	50.0
Neutral	3	15.0	15.0
Total	20	100.0	100.0

Source: Field Survey July 2017

Considering table 4.2.2, food manufacturing firms mostly trace overhead costs to their activities. This is evident from Table 4.3.1.3 that seven (7) out of 20 respondents representing 35% strongly agree. 10 out of 20 respondents representing 50% agree, and 3 out of 20 respondents representing 15% were neutral about this. Hence, it can be inferred that most food manufacturing firms in Tema trace their overhead costs to their manufacturing activities.

Table 4.2.3 Trace overhead costs to cost objects

Responses	Frequency	Percent	Valid Percent
Strongly Agree	3	15.0	15.0
Agree	11	55.0	55.0
Neutral	6	30.0	30.0
Total	**20**	**100.0**	**100.0**

Source: Field Survey July 2017

From Table 4.2.3, three 3 out of 20 respondents representing 15% strongly agreed, attesting to the fact that they tracing of overhead costs to cost objects as part of their manufacturing activities. Also, as a reference from the survey, 11 out of 20 respondents representing 55% agreed. And 6 out of 20 were. Based on this, it can be concluded that most food manufacturing firms trace overhead costs to cost objects.

Table 4.2.4 Showing calculate of primary activity rates of individual activities

Responses	Frequency	Percent	Valid Percent
Strongly Agree	5	25.0	25.0
Agree	10	50.0	40.0
Neutral	4	20.0	20.0
Disagree	1	5.0	10.0
Total	**20**	**100.0**	**100.0**

Source: Field Survey July 2017

From table 4.2.4, 5 out of 20 of the food manufacturing firms representing 25% strongly agreed to the. 10 out of 20 respondents representing 50% agreed. 4 out of 20 respondents representing 20% were neutral. 1 out of 20 respondents representing 5% disagreed. From the analysis, it was evident that food manufacturing firms calculate primary activity rates of individual activities.

Table 4.2.5 Assigning the costs of secondary activities to primary activities

Responses	Frequency	Percentage	Valid Percentage
Agree	6	30.0	30.0
Neutral	5	25.0	25.0
Disagree	9	45.0	45.0
Total	**20**	**100.0**	**100.0**

Source: Field Survey July 2017

Table 4.2.5 shows that 6 out of 20 respondents representing 30% agreed that costs of secondary activities are assigned to primary activities. Also five (5) out of (20) respondents representing 25% were neutral, and nine (9) out of (20) respondents representing 45% disagreed. Thisis an indication that, the majority of food manufacturing firms do not assign the costs of secondary activities to primary activities.

Table 4.2.6 Assign activity costs to cost objects

Responses	Frequency	Percentage	Valid Percentage
Strongly Agree	6	30.0	30.0
Agree	8	40.0	40.0
Neutral	5	25.0	25.0
Disagree	1	5.0	5.0
Total	20	100.0	100.0

Source: Field Survey July 2017

From table 4.2.6 six (6) respondents representing 30% strongly agreed that activity costs are assigned to cost objects, eight (8) respondents representing 40% agreed, five (5) respondents representing 25% were neutral and one (1) respondent representing 5% disagreed. This clearly depicts that most food manufacturing firms assign activity costs to cost objects.

Section C: Factors that motivate the Implementation of Activity- Based Costing

Table 4.2.7 ABC implementation increases the organization's profitability, significantly.

Responses	Frequency	Percentage	Valid Percentage
Strongly Agree	7	35.0	35.0
Agree	11	55.0	55.0
Neutral	2	10.0	10.0
Total	**20**	**100.0**	**100.0**

Source: Field Survey July 2017

From table 4.2.7, most food manufacturing firms have it that their Activity- Based Costing implementation increases the organization‟s profitability significantly with 11 out of 20 respondents representing 55% agreed to this assertion while. 7 out of 20 respondents representing 35% strongly agreed, and 2 out of 20 respondents representing 20% were neutral. Therefore, Activity- Based Costing has a tendency of increasing the firm‟s profitability significantly; as such they were motivated to implement it.

Table 4.2.8 ABC is a valuable overhead cost allocation system to identify real cost of product or service.

Responses	Frequency	Percentage	Valid Percentage
Strongly Agree	8	40.0	40.0
Agree	9	45.0	45.0
Neutral	3	15.0	15.0
Total	**20**	**100.0**	**100.0**

Source: Field Survey July 2017

It can be deduced from figure 4.2.8 that, 8 out of 20 respondents representing 40% strongly agree that ABC is a valuable overhead cost allocation system to identify the real cost of a product. Nine (9) out of twenty (20) respondents representing 45% agreed. Three (3) out of twenty (20) respondents representing 15% were neutral to this factor. This shows that firms are likely the implement Activity- Based Costing since it is a valuable overhead cost allocation system that can be used to identify the real cost of a product or service.

Table 4.2.9 ABC helps in the classification of cost based on production activities.

Responses	Frequency	Percentage	Valid Percentage
Strongly Agree	7	35.0	35.0
Agree	10	50.0	50.0
Neutral	3	15.0	15.0
Total	**20**	**100.0**	**100.0**

Source: Field Survey July 2017

From the survey, table 4.2.9, it was made evidently clear that most respondent attested to the fact that ABC helps in the classification of cost based on production activities. This is evident by 7 out of 20 respondents representing 35% who strongly agreed and 10 out of

20 respondents representing 50% who also agreed. But 3 out of 20 respondents representing 15% were neutral. In conclusion, firms are motivated to implement ABC because it helps them in the classification of cost based on production activities.

Table 4.2.10 ABC leads to proper cost identification.

Responses	Frequency	Percentage	Valid Percentage
Strongly Agree	11	55.0	55.0
Agree	5	25.0	25.0
Neutral	4	20.0	20.0
Total	**20**	**100.0**	**100.0**

Source: Field Survey July 2017

From table 4.2.10, 11 out of 20 respondents representing 55% strongly agreed that ABC leads to proper cost identification. 5 out of 20 respondents representing 25% agreed, and 4 out of 20 respondents representing 20% were neutral. From the data, it can be inferred that, firms are motivated to implement ABC since it leads to proper cost identification in a food manufacturing firm"s costing activities.

Table 4.2.11 Showing the competitive strength in the industry in terms of price, quality and performance

Responses	Frequency	Percent	Valid Percent
Strongly Agree	2	10.0	10.0
Agree	10	50.0	50.0
Neutral	8	40.0	40.0
Total	**20**	**100.0**	**100.0**

Source: Field Survey July 2017

From table 4.2.11, 2 out of 20 respondents representing 10% strongly agreed that ABC creates a competitive strength in the industry in terms of price, quality and performance. Ten (10) out of twenty (20) respondents representing 50% agreed, and 8 out of 20 respondents representing 40% were neutral. From the data, it can be inferred that ABC, being able to create a competitive strength in the industry in terms of price, quality and performance motivates firms to implement it.

Table 4.2.12 ABC providing the right incentives for managers to make decisions that are consistent with top management goals.

Responses	Frequency	Percentage	Valid Percentage
Strongly Agree	5	25.0	25.0
Agree	9	45.0	45.0
Neutral	6	30.0	30.0
Total	**20**	**100.0**	**100.0**

Source: Field Survey July 2017

From table 4.2.12, five (5) out of twenty (20) respondents representing 25% strongly agreed that ABC provides the right incentives for managers to make decisions that are consistent with top management goals, nine (9) out of twenty (20) respondents representing 45% agreed. Also, six (6) out of twenty (20) respondents representing 30% were neutral. This shows that most food manufacturing firms implement ABC because it is able to provide the right incentives for managers to make decisions that are consistent with top management goals.

Section D: Benefits associated with Activity- Based Costing

Table 4.2.13 ABC has helped to identify major cost drivers for each of the products

Responses	Frequency	Percentage	Valid Percentage
Strongly Agree	9	45.0	45.0
Agree	7	35.0	35.0
Neutral	4	20.0	20.0
Total	**20**	**100.0**	**100.0**

Source: Field Survey July 2017

Considering table 4.2.13, ABC as a costing tool has helped in the identification of major cost drivers for manufacturing firms. It is evident from Table above as 9 out of 20 respondents representing 45% strongly agreed. 7 out of 20 respondents representing 35% agreed and 4 out of 20 respondents representing 20%, . Hence, it can be inferred that it is beneficial to manufacturing firms by helping in the identification of major cost drivers.

Table 4.2.14 Indicating how ABC has proven to be a valuable overhead cost allocation system to identify real cost of product or service

Responses	Frequency	Percentage	Valid Percentage
Strongly Agree	1	5.0	5.0
Agree	17	85.0	85.0
Neutral	2	10.0	10.0
Total	**20**	**100.0**	**100.0**

Source: Field Survey July 2017

From Table 4.2.14, one (1) out of twenty (20) respondents representing 5% attest to the fact that ABC is beneficial when implemented. Seventeen (17) out of twenty (20) respondents representing 85% agreed and two (2) out of twenty (20) were neutral. Based on this, it could be concluded that ABC has proven to be a valuable overhead cost allocation system to identify real cost of product or service.

Table 4.2.15 Showing how ABC has helped to create more value for customers through identifying major input, output and process elements

Responses	Frequency	Percentage	Valid Percentge
Strongly Agree	5	25.0	25.0
Agree	5	25.0	25.0
Neutral	8	40.0	40.0
Disagree	2	10.0	10.0
Total	**20**	**100.0**	**100.0**

Source: Field Survey July 2017

From table 4.2.15, 5 out of 20 respondents representing 25% strongly agreed that ABC helps to create more value for customers through identifying major input, output and process elements. Also, 5 out of 20 respondents representing 25% agreed, 8 out of 20 respondents representing 40% were neutral, and 2 out of 20 respondents representing 10% disagreed. From the analysis it is evident that one way or the other, ABC helps to create more value for customers through identifying major input, output and process elements.

Table 4.2.16 Indicating that ABC implementation gives an organization better financial returns in terms of long-term customer acceptability

Responses	Frequency	Percentage	Valid Percentage
Strongly Agree	2	10.0	10.0
Agree	9	45.0	45.0
Neutral	8	40.0	40.0
Disagree	1	5.0	5.0
Total	**20**	**100.0**	**100.0**

Source: Field Survey July 2017

From table 4.2.16, 2 out of 20 respondents representing 10% strongly agreed that ABC when implemented gives firms better financial returns in terms of long-term customer acceptability. Also, 9 out of 20 respondents representing 45% agreed, 8 out of 20 respondents representing 40% were neutral and 1 out of 20 respondents representing 5% disagreed. From the analysis, it can be observed that ABC implementation gives firms better financial returns in terms of long-term customer acceptability

Table 4.2.17 Showing how ABC has helped us to deliver better quality product or service than before

Responses	Frequency	Percentage	Valid Percentage
Strongly Agree	3	15.0	15.0
Agree	5	25.0	25.0
Neutral	9	45.0	45.0
Disagree	3	15.0	15.0
Total	**20**	**100.0**	**100.0**

Source: Field Survey July 2017

Table 4.2.17 shows that 3 out of 20 respondents representing 15% strongly agreed that ABC implementation has helped them deliver better quality products than before. Five (5) out of twenty (20) respondents representing 25% agreed, nine (9) out of twenty (20) respondents representing 45% were neutral and the other three (3) out of twenty (20) which represents 15% disagreed. This shows that, ABC has not really affect the delivery of better quality products than before.

Section E: Challenges associated with the Implementation of Activity-Based Costing

Table 4.2.18 ABC implementation is costly

Responses	Frequency	Percentage	Valid Percentage
Strongly Agree	11	55.0	55.0
Agree	7	35.0	35.0
Neutral	2	10.0	10.0
Total	**20**	**100.0**	**100.0**

Source: Field Survey July 2017

From table 4.2.18, it is evident that ABC implementation is costly. This can be seen with 11 out of 20 respondents representing 55% who strongly agreed, 7 out of 20 respondents representing 35% agreed, and 2 out of 20 respondents representing 10% were neutral. Therefore, it can be concluded that Activity- Based Costing implementation is costly.

Table 4.2.19 Showing that Poor implementation processes reduces the effectiveness of Activity- Based Costing

Responses	Frequency	Percentage	Valid Percentage
Strongly Agree	13	65.0	65.0
Agree	5	25.0	25.0
Neutral	2	10.0	10.0
Total	**20**	**100.0**	**100.0**

Source: Field Survey July 2017

From the survey and table 4.2.19, it was made evident that poor implementation of ABC reduces its effectiveness. 13 out of 20 respondents representing 65% strongly agreed to this. 5 out of 20 respondents representing 25% agreed, and 2 out of 20 respondents representing 10% were neutral. In conclusion it is evident that a poor implementation process reduces the effectiveness of Activity- Based Costing.

Table 4.2.20 Showing the difficulty in designing system

Responses	Frequency	Percent	Valid Percent
Strongly Agree	9	45.0	45.0
Agree	6	30.0	30.0
Neutral	4	20.0	20.0
Disagree	1	5.0	5.0
Total	**20**	**100.0**	**100.0**

Source: Field Survey July 2017

From table 4.2.20, it was observed that 9 out of 20 respondents representing 45% strongly agreed that it is difficult in designing systems, 6 out of 20 respondents representing 30% agreed, 4 out of 20 respondents representing 20% were neutral and 1 out of 20 respondents representing 5% disagreed. Therefore, it can be concluded that as a challenge, Activity- Based Costing systems are difficult when designing it.

Table 4.2.21 Difficulty in identifying activities

Responses	Frequency	Percentage	Valid Percentge
Strongly Agree	7	35.0	35.0
Agree	10	50.0	50.0
Neutral	2	10.0	10.0
Disagree	1	5.0	5.0
Total	**20**	**100.0**	**100.0**

Source: Field Survey July 2017

From table 4.2.22, 7 out of 20 respondents representing 35% strongly agreed that with the use of ABC, it is difficult in identifying activities. Also, 10 out of 20 respondents representing 50% agreed, 2 out of 20 respondents representing 10% were neutral, and 1 out of 20 respondents representing 5% disagreed. From the data, it can be inferred that, with the implementation of Activity- Based Costing, it is difficult identifying activities.

Table 4.2.22 Difficulty in gathering data on cost- drivers

Responses	Frequency	Percentage	Valid Percentage
Strongly Agree	7	35.0	35.0
Agree	10	50.0	50.0
Neutral	2	10.0	10.0
Disagree	1	5.0	5.0
Total	**20**	**100.0**	**100.0**

Source: Field Survey July 2017

Considering table 4.2.22, it is evident that ABC users find it difficult when gathering data on cost- drivers. This is seen by 7 out of 20 respondents representing 35% strongly agreed, 10 out of 20 respondents representing 50% agreed, 2 out of 20 respondents representing 10% were neutral, and 1 out of 20 respondents representing 5% disagreed. Hence, it can be inferred that firms find it difficult in gathering data on cost- driver with the implementation of Activity- Based Costing.

Table 4.2.23 Lack of commitment and cooperation among departments

Responses	Frequency	Percent	Valid Percent
Strongly Agree	2	10.0	10.0
Agree	5	25.0	25.0
Neutral	5	25.0	25.0
Disagree	8	40.0	40.0
Total	**20**	**100.0**	**100.0**

Source: Field Survey July 2017

It can be deduced from table 4.2.23, 2 that out of 20 respondents representing 10% strongly agreed that the lack of commitment and cooperation among departments is a challenge firms face in implementing ABC. Also, 5 out of 20 respondents representing 25% agreed, 5 out of 20 respondents representing 25% were neutral, and 8 out of 20

respondents representing 40% disagreed. From the analysis, it was evident that the lack of commitment and cooperation among departments is a bit of challenge firm‟s face in implementing Activity- Based Costing.

4.3 Discussion of Research Findings

In the discussion of research findings, the key and main points were made available to simply communicate the actual findings of the research project. It points out very vital information relevant to the study gotten from data obtained from respondents.

With respect to the first objective of whether food manufacturing firms in Tema use Activity- Based Costing as a cost analysis tool, it was realised that, most food manufacturing firms in Tema use Activity- Based Costing as a cost analysis tool in the cause of producing their goods and services. This was determined by the response given by respondents which showed that the firms trace overhead costs to cost objects, assign cost to activities performed in the production process, and also calculate the primary activity rates of individual activities. These being part of processes in ABC implementation, it showed that firms used ABC as a cost analysis tool. This is evident in the tables 4.2 to 4.2.6 where for example, 55% of the respondents assigned the cost of resources to activities.

From table 4.2.7 to table 4.2.12, it can be determined that some of the main factors that motivate manufacturing firms in Tema to implement Activity- Based Costing include the fact that 55% stated that its implementation increases a firm‟s profitability marginally

over a period of time. Also based on responses from table 4.2.9, ABC implementation aids firms in the classification of cost based on production activities enabling firms know what costs went into production at each stage and this was agreed by 50% of the respondents. Also, from table 4.2.10, 55% of the respondents strongly agreed that ABC implementation leads to proper cost identification enabling managers make decisions that are consistent with top management goals such as the reduction of cost of production.

It can be deducted from the analysis of the third objective that ABC comes along with various benefits to its implementers in various ways. This is made evident in table 4.2.13, by 9 out of 20 respondents representing 45% who strongly agreed that ABC helps them to identify major cost drivers in their process of production enabling them to easily identify the causes of cost at each stage of production. Again findings in table 4.2.14, seventeen (17) out of twenty (20) respondents representing 85% agreed by attesting to the fact that ABC has been beneficial since it has proven to be a valuable cost overhead cost allocation system which aids them to identify real costs of product or service. Also table 4.2.15, spells out another benefit of ABC being that it helps firms to create more value for customers through identifying major input, output and process elements. This is apparent with 5 out of 20 respondents representing 25% who strongly agreed and 5 out of 20 respondents representing 25% who agreed showing that through the use of ABC, firms are able to monitor and minimise the cost of their products to create more value for their customers. Lastly, from the findings in table 4.2.17, despite the many benefits of ABC, it does not really affect the delivery of better quality products as compared to previous productions before its implementation. This is evident by a marginal number of

respondents who were neutral (9 out of 20 respondents representing 45%) and also disagreed (3 out of twenty 20 which represents 15%).

The last objective being the challenges associated with the implementation. As realized from the survey, ABC does not just come along with benefits, but there are some challenges associated with it as well. Some of which are the costly nature of its implementation which was represented by 55% of respondents in table 4.2.18, and also 65% of respondents stating that poor implementation processes reduces its effectiveness of the tool thus making it difficult also in identifying activities, and also gathering data on cost- drivers.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.0 Introduction

This chapter summarizes, concludes and makes appropriate recommendations with respect to the research topic. This is arrived at by making critical investigation and analysis of the response from the questionnaire administered.

5.1 Summary of Findings

The main purpose of the study was to find out the Activity Based- Costing practices in selected food manufacturing firms in Tema. The researcher‟s objectives of the study were to identify if food manufacturing firms in Tema use Activity- Based Costing, ascertain the factors that motivated the selected food manufacturing firms to implement Activity-Based Costing system and lastly, determine the challenges and benefits associated with Activity- Based Costing in the selected food manufacturing firms in Tema.

After making analysis on the data obtained from respondents, it was comprehended that some manufacturing firms in Tema use Activity- Based Costing as a cost analysis tool in the cause of producing goods and services. This was determined by the responses given by respondents while indicated that they followed processes such as tracing overhead costs to cost objects and also calculating primary activity rates of individual activities.

The second objective also revealed some of the factors that motivate these firms to implement Activity- Based Costing. Table 4.2.9 being an example of the reasons, indicates that ABC implementation aids firms in the classification of cost based on production activities enabling firms know what costs went into production at each stage and this was agreed by 50% of the respondents.

Thirdly in finding out the benefits associated with the implementation of Activity- Based Costing, the findings in table 4.2.14, gives a typical example of such benefits. This indicated that seventeen (17) out of twenty (20) respondents representing 85% agreed by attesting to the fact that ABC has been beneficial since it has proven to be a valuable cost overhead cost allocation system which aids them to identify real costs of product or service.

Lastly, in the analysis of data from respondents, it revealed that even though Activity-Based Costing is of great benefit to its implementers, it also has its own difficulties as well. An example of such difficulty is the 65% of respondents stating that poor implementation processes reduces its effectiveness of the tool thus making it difficult also in identifying activities, and also gathering data on cost- drivers.

5.2 Conclusion

This study provided evidence that the adoption of new management accounting practices such as ABC is not limited to developed nations. In Tema, a small percentage of food manufacturing firms have started implementing ABC which is not surprising for a

number of reasons. First, in order to survive in today"s highly competitive border- less world, firms all over the world are forced to adopt the latest managerial philosophies and practices and ABC is not an exception. Second, the advancement in information technology made it easier for new accounting methods and techniques to be transferred from developed to developing nations. And also the dominance of foreign managers and accountants in some firms based in Tema.

The most important motive for implementing or considering ABC as well as its benefits are that it provides insight into cost causation which helps in cost reduction and control. The provision of more accurate information for pricing decisions, product profitability analysis, and inventory valuation and income determination were also suggested as important. With respect to difficulties in designing and implementing ABC system, the study found the identification of activities to be one of its challenges.

5.3 Recommendations

In view of the research findings, the following recommendations are made in relation to the objectives of the study of Activity- Based Costing in selected food manufacturing firms in Tema.

1. Even though some food manufacturing firms are using Activity- Based Costing presently, the researcher still recommends that a greater awareness and other helpful training seminars be organized to introduce other manufacturing firms to it.

2. Firms who implement ABC should train their staff since it is an important factor in the implementation of new processes. This helps employees to understand how ABC differs from other cost accounting tools. This will improve their confidence and positive outlook regarding its implementation.
3. The benefits of Activity- Based Costing should be made known to other firms to encourage them to use it too.
4. Firms who want to get the best out of their manufacturing processes regarding the implementation of ABC should allocate more funds to its implementation and also to the training of employees who are involved in ABC implementation to enable them have the best of output.

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APPENDIX

UNIVERSITY OF EDUCATION WINNEBA-KUMASI CAMPUS

DEPARTMENT OF ACCOUNTING

QUESTIONNAIRE FOR ACTIVITY-BASED COSTING IN SELECTED FOOD MANUFACTURING FIRMS IN TEMA.

Dear respondent,

My name is Obeng Hollack, a final year student University of Education Winneba-kumasi Campus. This questionnaire is designed to elicit information on the study **Activity-Based Costing Practices in Selected Food Manufacturing Firms in Tema**. This academic project work is a requirement for awarding Masters in Business Administration (MBA Accounting Option) at. Any information in relation to this research given would be treated with all confidentiality. Please answer every question with your honest opinion. Where multiple choice or alternatives are given, please tick [√] as appropriate:

Thank you for your support.

SECTION A: Demography

Direction: Please tick [√] responses as appropriate.

SECTION A: Personal Data

1. Position Held in Organization

   Financial Director [ ] Accountant [ ] Cost & Management Accountant [ ]

If other specify …….

2. Number of years you have worked in this organization.

   1- 3 years [ ] 3-6 years [ ] 6- 9years [ ] 9- 11 years [ ]

   11 years and above [ ]

SECTION B: The use of Activity- Based Costing in the organization

In your opinion, the company uses Activity- Based Costing as a cost allocation tool on the following grounds …

Please indicate your response by circling a number on the scale 1 – 5

[1] Strongly Agree [2] Agree [3] Neutral [4] Disagree [5] Strongly Disagree

Variables	**Rating Scale**				
1. Identify, define and classify activities	1	2	3	4	5
2. Assign the cost of resources to activities	1	2	3	4	5
3. Trace overhead costs to activities	1	2	3	4	5
4. Trace overhead costs to cost objects	1	2	3	4	5
5. Calculate primary activity rates of individual activities	1	2	3	4	5
6. Assign the costs of secondary activities to primary activities	1	2	3	4	5
7. Assign activity costs to cost objects	1	2	3	4	5

SECTION C: Factors that motivate the Implementation of Activity- Based Costing

Direction: Please indicate your response by circling a number on the scale 1 – 5 to identify the factors that motivated the Implementation of Activity- Based Costing the organization.

[1] Strongly Agree [2] Agree[3] Neutral [4] Disagree [5] Strongly Disagree

Variables	Rating Scale				
1. Activity- Based Costing implementation increases the organization"s profitability, significantly.	1	2	3	4	5
2. Activity- Based Costing is a valuable overhead cost allocation system to identify real cost of product or service.	1	2	3	4	5
3. Activity- Based Costing helps in the classification of cost based on production activities.	1	2	3	4	5
4. Activity- Based Costing leads to proper cost identification.	1	2	3	4	5
5. Competitive strength in the industry in terms of price, quality and performance	1	2	3	4	5
6. Activity- Based Costing provides the right incentives for managers to make decisions that are consistent with top management goals.	1	2	3	4	5

7. Please specify if there is any other factor (s) that motivated the implementation of Activity- Based Costing in your firm

……

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SECTION D: Benefits associated with Activity- Based Costing

Direction: Please indicate your response by circling a number on the scale 1 – 5 to determine benefits associated with Activity- Based Costing

[1] Strongly Agree [2] Agree [3] Neutral [4] Disagree [5] Strongly Disagree

Variables	Rating Scale				
1. Activity- Based Costing has helped to identify major cost drivers for each of the products	1	2	3	4	5
2. Activity- Based Costing has proven to be a valuable overhead cost allocation system to identify real cost of product or service	1	2	3	4	5
3. Activity- Based Costing has helped to create more value for customers through identifying major input, output and process elements	1	2	3	4	5
4. Activity- Based Costing implementation gives an organization better financial return in terms of long-term customer acceptability	1	2	3	4	5
5. Activity- Based Costing has helped us to deliver better quality product or service than before	1	2	3	4	5

6. Please specify if there is any other benefit (s)

…….....

.....

SECTION E: Challenges associated with the Implementation of Activity- Based Costing Direction: Please indicate by circling a number on the scale 1 – 5to challenges associated with the Implementation of Activity- Based Costing

[1] Strongly Agree [2] Agree [3] Neutral [4] Disagree [5] Strongly Disagree

Variables	Rating Scale				
1. Activity- Based Costing implementation is costly	1	2	3	4	5
2. Poor implementation processes reduces the effectiveness of Activity- Based Costing	1	2	3	4	5
3. Difficulty in designing system	1	2	3	4	5
4. Difficulty in identifying activities	1	2	3	4	5
5. Difficulty in gathering data on cost- drivers	1	2	3	4	5
6. Lack of commitment and cooperation among departments	1	2	3	4	5

Please specify if there is any other challenge (s)

…….....

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