

**A SURVEY OF COST ALLOCATION PRACTICES OF  
MANUFACTURING COMPANIES IN KENYA**

**BY:**

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## DECLARATION

This research project is my original work and has not been presented for a degree at any other University

Signed  Date 09/11/2005

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D61/7543/03

This research project has been submitted for examination with my approval as University Supervisor

Signed  Date 10/11/2005

Mrs. Winnie Nyamute.

## DEDICATION

This project is dedicated to my friend Eva, and to my mother Mrs. Sarah Too, my brothers Joseph, David, Richard and to my sister Beatrice for all your sacrifices throughout this study.

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## **ABSTRACT**

This study sought to survey how Kenyan manufacturing companies allocate their fixed overheads to products or departments. Cost allocation affects reported figures in the companies' financial statements and hence the decisions taken on the basis of those financial statements.

Fifty companies were selected, and asked to fill a semi-structured questionnaire on their allocation method in terms of cost centers used, allocation base used, service department cost allocation methods, over head application rates and how they deal with under or over recovery of overheads. Response rate was 64 % of the surveyed companies. Data was analyzed using percentages, proportions and tables.

Results indicate that cost allocation is practiced by majority of companies in Kenya. However, most companies still use traditional volume-based approach, which suggests that majority of companies, could be making serious mistakes in their decisions as noted in the literature that bad allocation lead to poor decisions. The most important reason for cost allocation noted by respondents is to provide information for managerial decision-making.

On average, Kenyan manufacturing companies have two cost centers and majority of companies use units of outputs as their allocation base. Majority of companies use actual activity levels to determine an overhead application rate, and thus the problem of dealing with over or under recovery of overheads is not common in Kenya. The few companies that use budgeted activity levels; however, write- off over- or- under application of overheads through profit and loss account. Results of this study also indicate that Activity Based Costing has not been appreciated in Kenya.

# CHAPTER 1

## 1.0 INTRODUCTION

### 1.1 BACKGROUND

Corporate organizations accumulate costs of resources consumed in their operations for the purpose of performance measurement and for decision-making. Snyder et al (1997) argue that better managerial control in terms of decision making and understanding the total costs of a system or service result from allocating indirect costs. Costs are classified as direct, which are costs that are related to the cost object and can be traced to it in an economically feasible way or indirect costs, which are costs that cannot be traced to the cost object in an economically feasible way.

The accumulated costs need to be assigned to cost object using a selected criteria. Accounting literature recognizes two methods of valuing cost objects. Horngren, (1994) note that two methods of costing the inventories of manufacturing companies are direct costing and absorption costing. Under direct costing, only those costs of production that vary directly with activity are treated as product costs. These costs include direct materials, labour, and variable portion of manufacturing overheads.

Under direct costing, fixed manufacturing overheads are treated as period costs, and are charged in its entirety against revenue each period. Garrison (1991) notes that advocates of direct costing argue that fixed overhead costs relate to the capacity to produce rather than to the actual production of units of a product in a given year. They argue that cost for facilities, equipment, insurance and supervisory salaries, represent costs of being ready to produce and therefore will be incurred regardless of whether actual production takes place.



Absorption costing treats all costs of production as product costs, regardless of whether they are variable or fixed in nature. Advocates of absorption costing, argue that fixed overheads are just as essential to the production process as variable costs. They argue that to be fully costed, each unit of the product must bear an equitable share of all manufacturing costs. Accordingly, fixed overheads need to be allocated. "If there is a cost that must be divided up among many cost objects, and there is no causal or statistical relationship to make this division, then division of such costs is an allocation", Hirsch (1991).

Kaplan and Atkinson (1998) trace the need to properly allocate indirect costs to the mid-nineteen century when complex metalworking companies emerged and the rise of Scientific Management Theory. They note that before the advent of metal working shops and scientific management movement, management accounting systems focused on directly measured costs, such as material and labor that could easily be traced to the output product. They conclude that although overhead and capital costs existed, the narrow product lines of early manufacturing corporations created little demand to attempt to assign indirect costs to output products.

The metalworking shops, however, produced a wide variety of finished products that consumed resources at widely different rates. Because of the dispersion that the various output products made on the firm's capital, labor, and support resources, simple measures of cost per pound or cost per unit of output were not adequate to summarize the efficiency of conversion process. Kaplan and Atkinson (1998) notes that engineers and managers of corporations therefore, started searching for ways to assign overhead costs to products, especially when bidding for new jobs.

Kaplan and Atkinson (1998) argues that because information collection and processing costs were quite high a century ago, and overhead costs were still less important than direct material and labor costs, it was not deemed worthwhile to invest large amounts of energy and resources to accurately measure and assign indirect and support department costs to products.

Simple rules were thus adopted such as marking up direct labor hours or shillings by a percentage that reflected the ratio of indirect and support department expenses.

This short cut, or approximation, of attributing the consumption of overhead resources to the quantity of direct labor in a product was criticized almost immediately. Church (1908), quoted by Kaplan and Atkinson (1998), noted that if we apply this method to a shop in which large and small machines, highly paid and cheap labor, heavy castings and small parts, are all in operation together, then the result, unless measures are taken to supplement it, is no longer trust worthy.

In order to correctly and fairly allocate indirect costs, it is necessary to first identify and segregate costs as either direct or indirect, called cost pools. Once indirect cost have been grouped together in cost pools that are like in nature, and in terms of their relative contribution to particular cost objectives, the next step is to appropriately distribute these costs using an acceptable method, (OMB A-21).

Snyder (1999) notes that cost allocation is a three-step process of selecting cost objects, pooling related overhead costs and selecting the cost bases to connect the objectives to the pooled costs. He notes further that allocation may be simple, relying on a single base, or Activity Based Costing (ABC), relying on multiple bases. Horngren et al (1994) argues that managers must first choose the primary purpose that a particular cost allocation is to fulfill and then select the appropriate criterion in implementing the allocation. He emphasizes the priority of cause and effect and the benefits received criteria, especially when the purpose for cost allocation is related to economic decision or motivation purposes.

Cost allocation serves important purposes in corporate organizations. According to Bloncher et al (1999), the objectives of cost allocation are to achieve effective cost management through method that motivate managers to exert a high level of effort to achieve the goals of top management, provide the right incentive for managers to make decisions that are consistent with the goals of top management and fairly determine the

rewards earned by the managers for their effort, skills and for the effectiveness of decision making. They argue that a major advantage of cost allocation systems is that they draw managers' attention to shared facilities. The cost allocation provides a strong incentive for individual and team efforts to manage the cost of these facilities. Also it can have the benefit of reminding managers of the service and thereby encouraging them to use it.

Despite the important purposes that cost allocation serves, academicians or practicing accountants have suggested no objective methods of allocation. As a result, cost allocation has been a controversial issue among scholars and practicing accountants. Reed (1927) demonstrated the problem with allocation using a story of a butcher who killed a calf, as described below: -

"The butcher he killed a calf, a nice young, adolescent bull. Being a modern butcher, he then called upon his engineer, his secretary and his figurers to appear and perform a cost allocation on the carcass. "What price veal? Quote he, and what price hide? How much did the meat on this animal cost? How much did the hide cost in its present undressed state: my rate of profit must be the same, too, on the bones and hoofs, so tell me the cost per pound of each" There upon, and for many days thereafter, the figures flew freely. The bull was spread upon the dissecting table and treated from every angle and by every method. And finally, the city health authorities came and carted them all away."

(Reed, C.S, "Veal, Hide and By-Products," Electrical World, August 27, 1927)

Reed (1927) concludes that there has been a lot of good bull used up in allocations, but the original bull remains unallocated. The controversy relates to selection of appropriate allocation bases that meets the criteria for effective cost allocation, that is, one that has a cause and effect relationship with the indirect costs.

## 1.2 Statement of the Problem

Bloncher et al (1999) note that one of the most pervasive problems in management accounting is determining how the cost of shared facility; programme, production, process or service should be allocated among its users. This is because there are no objective acceptable methods of cost allocation.

As such cost allocation has generated a lot controversy among the accountants and scholars for along time. The controversy emanates from the fact that no objective methods or allocation bases exist, and thus allocation is viewed as being arbitrary. Thomas (1980), a great critic of cost allocation, calls these allocations "notional figure shuffling." He argues that cost allocations do not represent economic reality but rather, just accounting numbers. However, according to Hirsch (1988), allocations continue to exist and do not seem to be substantially changing even in the light of at least twenty years of criticisms by many academicians

Cost allocation affects reported figures in the financial statements and thus the decision usefulness of the financial statement information. According to Horngren (1994), cost figures play a key role in many important decisions. If these figures result from allocation bases that fail to capture cause and effect relationships, managers make decisions that conflict with maximizing long run share value, for example, products may be undercosted or overcosted.

Drury (2000) argues that managers using cost information extracted from simplistic systems are more likely to make important mistakes arising from using inaccurate cost information. The end result of this may be a high cost of errors. Conversely, sophisticated systems are more expensive to operate but they minimize the chances and cost of errors.

According to Drury (2000), more accurate product costs are required so that we can distinguish between profitable and unprofitable products. By more accurately measuring resources consumed by products or other cost objects, a firm can identify its sources of profits or losses. If the cost system does not capture sufficiently accurately the consumption of resources by products, the reported product costs will be distorted, and there is a danger that managers may drop profitable products or continue production of unprofitable products. A wrong allocation lead to wrong figures in the financial statements eventually translating into sub optimal decisions by managers

Cost allocation related studies have been done in Norway by Bjornenak (1997b), Holland by Boons et al (1994), Ireland by Clark (1995), in Australia and Japan by Blayney and Yokoyama (1991) and in United Kingdom by Drury (1993). These studies sort to determine how companies in respective countries deal with the problem of allocation in terms of objectives of cost allocation, cost centers used, nature and number of allocation bases used and methods of cost allocations in use. Therefore, this study is necessary to shed some light on how the issue of cost allocation is addressed in African manufacturing environments, characterized by low levels of technological development, which affects the level of detail of analysis of cost information. This study seeks to address the question "how do Kenyan manufacturing companies address cost allocation issues?"

### **1.3 Objectives of the Study**

- (i) To establish the purposes of allocating indirect costs by manufacturing companies in Kenya
- (ii) To establish the number of cost centers used and the overhead application rates used.
- (iii) To establish the type and number of cost allocation bases used by Kenyan manufacturing companies
- (iv) To establish cost allocation methods used for service department costs.

## **1.4 Significance of the Study**

This study is significant to a number of parties in academia, industry and the accounting profession as described below.

### **Industry Players**

Industry players and management of corporate organizations stand to benefit from the findings and recommendations of this study. The study will highlight the various options for cost allocation from which they could select. Hence they would improve their allocation practices.

### **Academicians**

The results of the study will be useful to academic community as a source of additional theoretical knowledge, which can further be utilized as a basis for further research in the area of cost allocation.

### **Standard Setting Bodies-Institute of Certified Public Accountants of Kenya**

The findings of this study will be useful to standard –setting bodies like Institute of Certified Public Accountants of Kenya (ICPAK) to determine the need for setting a standard to guide the cost allocation decisions of corporate organizations. This has happened in the USA where Cost Accounting Standards (CAS) has been established.

### **Management Consultants**

The findings will also be very useful to management consultants who seek opportunities from corporate organizations. If the findings indicate that traditional cost allocation practices are still widely used in Kenya, the management consultants can seek opportunities to help such companies establish modern improved cost allocation methods, for example, Activity Based Costing (ABC).

## CHAPTER 2

### 2.0 LITERATURE REVIEW

#### 2.1 Cost Allocation Systems

According to Drury (2000), for accurate assignment of indirect costs to cost objects cause- and- effect allocations should be used. He notes that two types systems can be used to assign indirect costs to cost objects; these are Traditional Costing Systems and Activity Based Costing (ABC) Systems.

##### 2.1.1 Traditional Costing Systems

Drury (2000) notes that traditional costing systems were developed in the early 1900s and are still widely used today. They rely extensively on arbitrary cost allocations. Kaplan and Atkinson (1998), note that traditional systems tend to be simplistic and are inexpensive to operate but they are likely to result in inaccurate cost assignments and thus the reporting of inaccurate costs. Traditional costing systems rely on volume-based allocation bases such as quantities of units produced, labor hours and machine hours used.

Traditional costing system has a four-step allocation process (Drury 2000, Kaplan and Atkinson 1998). These are; assigning all manufacturing overheads to production and service cost centers, reallocating the costs assigned to service cost centers to production cost centers, computing separate overhead application rate for each production cost center and finally, assigning production cost center overheads to products or other chosen cost objects.

### **2.1.2 Activity Based Costing (ABC) System**

As a result of inadequacies of traditional costing systems, ABC costing systems emerged in 1980s. Drury (2000) however notes low levels of adoption of ABC costing systems. He notes that surveys in many countries suggest that between 20% and 30% Of the surveyed organizations have implemented ABC systems.

He further notes that significant variations in the usage of ABC both within the same country and across different countries have been reported. He argues that the differences may arise from difficulty in precisely defining the difference between traditional costing systems and the specific time period when the surveys were actually undertaken.

Survey evidence suggests that over the last decade there has been an increasing interest in ABC (Drury, 2000). In the UK, surveys in the early 1990s reported adoption rates around 10% (Innes and Mitchell, 1991, Nichols, 1992; Drury et al., 1993). Similar adoption rates of 10% were found in Ireland (Clark, 1992) and 14% in Canada (Armitage and Nicholson, 1993). In the USA, Green and Amenkhienan (1992) claimed that 45% of firms used ABC to some extent. More recent surveys suggest higher ABC adoption rates. In the UK, reported usage was 20% (Innes and Mitchell, 1995a), 22% (Banerjee and Kane, 1996), 21% (Evans and Asworth, 1996) and 23% (Drury and Tayles, 2000). In the USA, Shim and Stagliano (1997) reported a usage rate of 27%.

Reported usage rates for mainland Europe are 19% in Belgium (Bruggeman et al., 1996) and 6% in Finland in 1992, 11% in 1993 and 24% in 1995(Virtanen et al, 1996). Low usage rates have been reported in Denmark (Israelsen et al., 1996), Sweden (Ask et al., 1996) and Germany (Scherrer, 1996). Activity –based techniques do not appear to have been adopted in Greece (Ballas and Venieris, 1996), Italy (Barbato et al., 1996) or Spain (Saez-Torrecilla et al., 1996).

Other studies have examined the applications of ABC. Innes and Mitchell (1995) found that cost reduction was the most widely used application. Other widely used applications included product/service pricing, cost modeling and performance



measurement/improvement. ABC was used for stock valuation by 29% of ABC adopters thus suggesting that majority of ABC users have separate systems for stock valuation and management accounting applications.

According to Bjornenak (1997a), there has been little research on who adopts ABC and for what reasons. His survey indicated that 40% of responding Norwegian companies had adopted ABC as an idea (i.e. they had implemented ABC or planned to do so).

Drury (2000), notes that different variables relating to cost structure, competition, existing cost systems, size and product diversity have been tested as explanatory factors for the adoption of ABC but only cost structure and size emerged to be statistically significant. A UK study by Drury and Tayles (2000) indicated company size and business sector had a significant impact on ABC adoption rates. The adoption rates were 45% for the largest organizations and 51% for financial and service organizations. Although ABC adopters used significantly more cost pools and cost drivers than non-adopters, most adopters used fewer cost pools and drivers compared with what is recommended in the literature. Approximately 50% of ABC adopters used less than 50 cost centers and less than 10 separate types of cost driver rates.

Friedman and Lyne's (1995) case study research of 12 UK companies cited top management support as a significant factor influencing the success or failure of ABC systems. Implementation problems identified by the various studies included the amount work in setting up the system and data collection, difficulties in identifying activities, and selecting cost drivers, lack of resources and inadequate computer software. The benefits reported by the studies included more accurate cost information for product pricing, more accurate profitability analysis, improved cost control and better understanding of cost causation.

Kaplan and Atkinson (1998) argues that ABC systems were developed to provide more accurate ways of assigning the costs of indirect and support resources to activities, business processes, products, services and customers. ABC systems recognize that

many of organization's resources are required not for physical production of units of product but to provide a broad array of support activities that enable a variety of products and services to be produced for a diverse group of customers.

Kaplan and Atkinson (1998) notes that ABC system of costing attempts to first identify the activities being performed by the organization's support resources. Then it traces the resource expenses of the support resources to activities, ending up with the total cost of performing each of the organization's support activities. In the next stage, ABC systems trace activity costs to products by identifying a cost driver for each activity, calculating an activity cost driver rate, and using this rate to drive activity costs to products.

Kaplan and Atkinson (1998) conclude that ABC systems expand the type of production cost centers used to accumulate costs. Rather than focus only on the location or organization of responsibility centers, ABC systems focus on the actual activities performed by organizational resources.

## **2.2 Purposes of cost allocation**

Horgren et al (1994) note that indirect cost are often a sizable percentage of the cost assigned to cost objects such as products, distribution channels, and customers. He notes that cost allocation serves four purposes; to provide information for economic decisions, to motivate manager and employees for example, to encourage the design of products that are simple to manufacture or less costly to service, to justify cost or complete reinforcement for example, cost product at a fair price. often done with defense contracting, to measure income and assets for reporting to external parties, for example, to cost inventories for financial reporting to stock holders and bond holders.

Drury (2004) argue that manufacturing organizations assign cost to products for two purposes; for internal profit measurement and external financial accounting requirements in order to allocate the manufacturing cost incurred during a period

between cost of goods sold and inventories, and secondly; to provide useful information for managerial decision-making requirements.

Freemgen and Liao (1981) identified the following purposes of allocation of corporate and support costs, ranked by frequency; to remind profit centre manager that indirect cost exist and that profit centre earning must be adequate to cover some share of cost, to encourage use of central services that would otherwise be underutilized, to stimulate profit center managers to put pressure on central managers to control service cost.

Atkinson (1987) found out that Canadian executives have the following objectives, ranked in order of importance, for allocating costs to divisions and department; to determine costs, to evaluate profit centers, to fix accountability, to allocate costs per usage, to promote more effective resource usage, to foster cost awareness

They further found out that these executives encountered the following difficulties in implementing their cost allocation programs; making the allocation results in losses being reported, friction arises among managers, market prices are unstable, allocations are perceived as arbitrary, usage is hard to monitor, agreement on the allocation method is difficult to obtain, and that allocation process is time Consuming

Similar surveys among Australian, Ramadan (1989) and United Kingdom, Dean, Joye and Blayney (1991) found that managers in Australia and United Kingdom gave the same ranking to the following reasons for allocating corporate costs; to acknowledge that division would incur such costs if they were independent units or if the services were not provided centrally, to make division managers aware that central cost exists, to stimulate divisional managers to put pressure on central support managers to control costs, to stimulate divisional managers to economize in usage of central service.

Snyder et al (1997) notes that there are two outcomes from allocating costs: better economic decisions and a higher level of managerial motivation. In the first case, management seeks to understand the "true" costs of a particular product or service better. The outcome of better economic knowledge should be better decision-making or

pricing concerning services. A failure to include increases in overhead such as administrative cost leads managers to underestimate the costs of new services.

Thus, according to Snyder (1997), too little money will be requested or budgeted, and the services will drain resources from other programmes. Similarly, if the services are priced, it may be at a level too low to recover a reasonable amount of operating costs.

Secondly, Snyder et al (1997) further argued that another outcome of allocation should be to encourage lower level managers to behave in ways that further the aims of the organization (as set forth in the planning of upper management). For example, upper management may want to increase the use of internal data processing resources. Individual departments may then be assessed a yearly, lump-sum expense based on the amount of data processing services available to them. They argue that since the department pays for the service regardless of how often they use them, they are encourage to use them to get the full benefit of the allocated costs.

Bloncher et al (1999) argues that cost allocation has both strategic and ethical roles. They note that a number of strategic and ethical issues are important in cost allocation. They argue that ethical issues arise when costs are allocated for products or services that are produced for both competitive environments and public agencies or government departments. The incentive in these situations is for the manufacturer, using cost allocation methods, to shift manufacturing costs from competitive products to cost-plus products. They cite evidence from a 1984 study reported by former US Secretary of Navy Mr. John F. Lehman. The study performed for the navy by a CPA firm, found that defense contractors' profits on military work were higher than for non-military work.

A second and related issue, according to Bloncher et al (1999), in implementing cost allocation methods, is the equity or fair share issue that arises when the government reimburses the cost of private institution, or when the government provides a service for a fee to the public. In both cases, cost allocation methods are used to determine the profit price or reimbursement amount.

A third important issue, according to Bloncher et al (1999), in cost allocation, is the effect of the chosen cost allocation method on the costs of products sold to or purchased from foreign subsidiaries. The cost allocation method usually affects the costs of products traded internationally and therefore the amount of taxes paid in the domestic and the foreign countries. Firms can reduce their worldwide tax liability by increasing the costs of products purchased in high tax countries, or countries where the firm does not have favorable tax treatment. Bloncher et al (1999) conclude that, for these reasons, international tax authorities closely watch the cost allocation methods used by multinational companies.

Jae et al (2000) argue that other than product costing, the reasons to allocate service departmental costs include; to control and aid in efficiency evaluation, for superior income and asset measurement for external parties, to remind production department managers of existence of indirect costs they have to absorb, motivate department managers to use the service wisely, and to accomplish a basis for cost justification or reimbursement.

Hilton (1997) argues that for product costing purposes, a joint product cost usually is allocated to the joint products that result from the joint production process. He notes that such an allocation is necessary for inventory valuation and income determination, among other reasons.

## **2.3 Cost Centers and Overhead Application Rates**

Drury (2000) defines cost centers or cost pools as the locations to which overhead costs are initially assigned. The total costs accumulated in each cost center are then assigned to cost objects using a separate allocation base for each cost center.

According to Drury (2000), if only a small number of cost centers are established, it is likely that activities within a cost center will not be homogeneous and, if the consumption of the activities by products/ services within the cost centers varies, activity resource consumption will not be accurately measured. Therefore, in most situations, increasing the number of cost centers increases the accuracy of measuring indirect costs consumed by cost objects. Drury, however, advises that the choice of number of cost should be based on cost-benefit- criteria

Ask and Ax (1992) in a survey of Swedish organizations concluded that 70% indicated that cost centre consisted of departments, 32% indicated that cost centre consisted of work cells, 22% noted that cost centers consisted of groups of machines and 15% noted that cost centers consisted of single machines

A Norwegian study by Bjornenak (1997b) reported an average of 38.3% cost centres used by the respondents. A survey of the United Kingdom (UK) organizations by Drury and Tayles (2000) concluded that 14% of respondents used less than six cost centers, 21% of the respondents used six to ten cost centers, 29% of the respondents used eleven to twenty cost centers and 36% of them used more than 20 cost centers.

Drury (2000) notes that the most simplistic traditional costing systems assigns indirect costs to cost objects using a single overhead rate for the organization as a whole. He argues that a blanket overhead rate will generally result in the reporting of inaccurate product costs. He suggests that a blanket overhead rate can only be justified when all products consume departmental overheads in approximately the same proportions. He advises that if a diverse product range is produced, with products spending different proportions of time in each department, separate departmental overhead rates should be established.

Drury (2000) argues a case for establishment of cost center overhead rates. He notes that in some situations, it is possible to go a stage further and establish separate overhead rates for smaller segments within an organization, such as groups of similar

machines within the same department. He notes that a single overhead rate for the whole department will result in inaccurate assignment of overheads when a department consists of a number of different production centers and products passing through the departments consume overheads of each production center in different proportions.

If a single overhead rate for the whole department were applied, all of the overheads within the department would be averaged out and the product would be indirectly allocated with some of the overheads of the remaining production centers. Drury concludes that if the department consists of a number of different production centers, each with significant overhead costs, and products consume production center overheads in different proportions, separate overhead application rates should be established for each production center within the department.

Hilton (1997) note that in some production processes, the relation between overhead costs and the firm's products differs substantially across production departments. In such cases, he advises that the firm may use departmental overhead application rate, which differs across production departments. This, he argues, usually results in a more accurate assignment of overhead costs to the firm's products.

However, significant usage of blanket overhead rates has been reported in surveys undertaken in many different countries. For example, the percentage usages vary from 20- 30% in UK (Drury and Tayles 1994), USA (Emore and Ness 1991), Australian (Joye and Blayney 1990; 1991) and Indian (Joshi 1998) surveys. In contrast, in Scandinavia only 5% of the Finnish companies (Lukka and Granlund 1996), one Norwegian company (Bjornenak, 1997 b) and none of the Swedish companies sampled (Ask et al., 1996) used a single plant-wide rate. Zero usage of plant-wide rates was also reported from a survey of Greek companies (Ballas and Venieris 1996). In a more recent study of UK organizations, Drury and Tayles (2000) reported that a blanket rate was used by 3% of the surveyed organizations.

A survey of Australian organizations by Joye and Blayne (1990) concluded that 36% of the responding organization used a single plant wide rate, 24% used overhead rates for groups of work center, 31% used overhead rates for each work centers, 9% used overhead rates for each machine

A survey of United Kingdom companies by Osborne et al (1993) reported that only 26% of companies used a single plant wide overhead rate, 31% used separate overhead rates for each department, and 38% used separate overhead rates for work centers within each department and 5% used none of the above.

Hilton (1997) argues that the use of predetermined overhead application rate leads to under application or over application of overhead costs. He notes that the amount by which actual overhead exceed applied overheads is called under applied overheads, while the amount by which applied overheads exceed actual overheads is called over applied overheads. He further argues that over or under applied overheads is caused by errors in the estimates of the overhead costs and amount of activity measure used to compute the predetermined overhead rate.

Hilton (1997) note that at the end of the accounting period, the managerial accountant has two alternatives for the disposition of under or over applied overheads. Under the most common alternative, the under or over applied overheads is closed into cost of goods sold. This reflects the fact that the cost of units sold had been underestimated due to the slightly underestimated predetermined overhead rate. He argues that most companies use this approach because it is simple and the amount of under or over applied overheads is usually small. Moreover, most firms wait until the end of the year to close under or over applied overheads into cost of goods sold.

Another alternative for disposition of under or over applied overhead costs according to Hilton (1997) is to prorate among cost of goods sold, work-in –progress and finished goods inventory.



He notes that some companies use a more accurate procedure to dispose of under or over applied overheads. This approach recognizes that underestimation or overestimation of the predetermined overhead rate affects not only cost of goods sold, but also work-in-progress and finished goods inventory. Therefore, under or over applied overheads affects all these accounts.

Hilton (1997) considers further aspects of overhead application. Specifically, he notes that the issue of overhead application illustrates the importance of cost benefit theme. He notes that a product costing system could be designed to use an actual overhead rate instead of a predetermined overhead rate. However, an actual overhead rate can be computed only at the end of the accounting period. The result is more accurate, but rather untimely product costing information.

Thus according to Hilton (1997), a trade-off exists between accuracy and timeliness. Accurate information is useful when decisions are based on the information. Better pricing or cost control decisions may result from more accurate product costs. However, late information entails a cost in terms of missed opportunities and late responses to events. Therefore, managers and managerial accountants must weigh the costs and benefits of the following choices: -

**Table 1: Actual Vs. Predetermined overhaed application rate: Cost Benefit Considerations**

Actual Overhead Application Rate	Predetermine Overhead Application Rate
More accurate, but un timely information	Less accurate, but more timely information

Source: Hilton (1997)

Hilton (1997) argues that it might be tempting to solve the overhead rate problem by using an actual rate and recomputing the rate frequently to provide more timely information. For example, the rate could be recomputed monthly. According to him, the problem with this is that some manufacturing overhead costs are seasonal. Thus, since overhead costs are incurred unevenly throughout the year, the monthly overhead rate would fluctuate widely. Moreover, the level of a volume-based cost driver, used as a denominator of overhead rate also may vary from period to period. These activity variations can add to the fluctuations in the overhead rate. The resulting inconsistency in product costs could give misleading signals for product pricing and other decisions that may depend on product cost information.

Hilton (1997) notes that accountants generally choose to smooth out fluctuations in the overhead rate by computing the overhead rate over along period of time. An overhead rate computed in this fashion is called a normalized overhead rate. The use of a relatively long time period forces the accountant to face the trade-off between accuracy and timeliness.

## 2.4 Cost Allocation Bases

According to Hilton (1997), the accounting department chooses some measure of productive activity to use as a basis for overhead head application. In traditional product costing systems, this measure usually is some volume-based cost driver such as direct labor, direct labor cost, or machine hours. He notes that to determine an overhead application rate, an estimate is made of the amount of manufacturing overhead that will be incurred during a specified period of time, and the amount of cost driver or activity base that will be used or incurred in the same period. Then A predetermined overhead application rate is then computed as follows: -

$$\text{Predetermined overhead rate} = \frac{\text{Budgeted Manufacturing Overhead Costs}}{\text{Budgeted Amount of Cost Driver}}$$

*Source: Hilton (1997)*

Hilton (1997) further note that manufacturing overhead includes various indirect manufacturing costs that varies greatly in their relationship to the production process. He argues that if a single volume-based cost driver (or activity base) is used in calculating a predetermined overhead application rate, it should be some productive input that is common across all of the firm's products. According to him, if for example, all of the firm's products require direct labor, but only some products require machine time, direct labor hours would be a preferable activity base. If machine hours were used as the base, products not requiring machine time would not be assigned any overhead costs.

Hilton (1997) advises that in selecting a volume- based cost driver (or activity base); the goal is to choose an input that varies in a pattern that is most similar to the pattern with which overhead costs vary. Thus products that indirectly cause large amounts of overhead costs should also require large amounts of the cost driver, and vice versa. During periods when the cost diver is at low level, the overhead costs incurred should be low. Thus, there should be a correlation between the incurrence of overhead costs and use of the cost driver.

Hilton (1997) notes that in traditional product costing systems, the most common volume-based cost divers are direct labor hours and direct labor costs. However, he argues that there is a trend away from using direct labor as an overhead application base. More production processes are becoming increasingly automated, through use of robotics and computer integrated manufacturing systems. Increased automation brings two results. First, manufacturing overhead costs represent a larger proportion of total production costs and secondly, direct labor decreases in importance as a factor of production. As direct labor declines in importance as a productive input, it becomes less appropriate as a cost driver. For this reason, Hilton (2000), concludes that some firms have switched to machine hours, process time, or throughput time as cost divers that better reflect the pattern of overhead cost incurrence.

Horngren et al (1994) note that increasingly, companies are turning to non-financial allocation bases. He notes that several companies are now experimenting with manufacturing lead-time as an allocation base. The rationale for using this allocation base is that steps that lengthen manufacturing lead-time frequently add to the indirect costs at the plant.

Survey evidence suggests mixed usage of different cost allocation bases. National Association of Accountants (1988), did a comparative study on management accounting in the advanced manufacturing environments of US and Japan and came up with the following results: -

**Table 2a: Cost Allocation Bases**

Allocation Base	Labor-based Environments		Machine-Based Environments	
	U.S. (%)	Japan (%)	U.S. (%)	Japan (%)
Standard Labor hours	32	53	10	10
Actual labor Hours	25	53	6	18
Standard labor costs	23	20	5	0
Actual labor costs	23	18	6	8
Standard Machine Hours	7	0	24	38
Actual Machine hours	7	0	15	30
Time in work center	5	3	8	13

*Source: National Association of Accountants (1988)*

Summary results of other surveys by Bjornenak (1997b), Boon et al (1994), and Drury et al (1993) in Norway, Holland, Ireland, Australia, Japan and UK respectively are presented in the following table.

**Table 2b: Cost Allocation Base**

	Norway	Holland	Ireland	Australia	Japan	UKa	UKb
Direct Labour Hours	65%	20%	52%	57%	57%	68%	73%
Machine Hours	29%	9%	19%	19%	12%	49%	26%
Direct Material Costs	26	6	10	12	11	30	19
Units of output	40	30	38	20	16	42	31
Prime cost	-	-	-	1	21	-	-
Others	23	35	9	-	-	-	-
ABC Cost Drivers						9	7

Source: Bjornenak (1997b), Boon et al (1994), and Drury et al (1993)

NB: UKa and UKb

**UKa**- relate to responses for automated production centres.

**UKb** – relate to response for non-automated production centers.

A survey of Finnish companies by Lukka and Granlund (1996) reported the following as the most widely used allocation bases; direct labor hours, direct labour cost, Machine hours used, Production quantity. This study did not report usage rates of the allocation bases

Drury (2004) notes that in addition to direct labor and machine hours, the following allocation bases are also sometimes used by traditional costing systems; direct wages percentage method, units of output method, direct material percentage method, and prime cost percentage method

Drury and Tayles (2000), surveyed UK organizations and concluded that, 34% used one cost driver, 25% used two cost drivers, 10% used three cost drivers, 21% used three to ten cost drivers, and 10% used more than ten cost drivers. A Norwegian study by Bjornenak (1997a) reported an average usage of 1.79 cost drivers

## 2.5 Joint Cost Allocation Methods

A survey of UK chemical and oil refining companies by Slater and Wootton (1994) reported the following methods of allocating joint costs:

Method	Percentages
Physical measures method	76
Sales value method	5
Negotiated basis	19
Others method	14

**Note:** The percentages add up to more than 100% because some companies used more than one method.

Their analysis per industry indicated that the following methods were used:

<u>Industry</u>	<u>Predominant Cost Allocation Method</u>
Petrol chemicals	Sales Value At Split off Point or Estimated Net Realizable Value Method
Coal processing	Physical Measures Method
Coal Chemicals	Physical Measures Method
Oil Refining	No Allocation of Joint Costs

Slater and Wootton, (1994) further noted that it was considered by the majority of oil refineries that the complex nature of the process involved and the vast number of joint products, made it impossible to establish any meaningful cost allocation between products.

Hilton (1997) argue that there are three commonly used methods for allocating joint product costs; physical- units method, relative sales value method, and net-realizable value method

## **2.6 Inter Service Department Re-allocations**

Service department provides service to production departments and other service departments. When interaction between service departments, exists the allocation process can become complicated. Drury (2004) identified four different method of allocating the service department costs as; repeated distribution method, simultaneous equation method, specified order of closing method and direct allocation method.

Jae et al ((2000), notes that in allocating service department costs, there are two general approaches that may be used: single rate method and dual rate method. They note that under single rate method, departmental costs are accumulated into a single cost pool, with no distinction between variable costs and fixed cost. With the dual rate method, departmental costs are accumulated into two or more cost pools.

Jae et al (2000) further note that once the service departmental costs are known, the next step is to allocate service departmental costs to the production departments. They note that there are three basic methods of allocating service department costs; the direct method, the step method and reciprocal method. The direct method allocates the costs of each service directly to production departments, with no intermediate allocation to other service departments.

The step method allocates cost of services rendered to other departments using an allocation sequence; this method is also called "step-down method". Jae et al (2000) note that reciprocal method is a method of allocating service department costs to production departments, where reciprocal services are allowed between service departments. They note that the method sets up simultaneous equations to determine the allocable cost of each service department.

Blayney and Yokoyama (1991) did a comparative study of Japanese and Australian cost accounting and management accounting practices and concluded the following, as summarized in the table:

**Table 3: Service Department Cost Allocation Methods.**

<b>Support Department Cost Allocation method</b>	<b>Australian (%)</b>	<b>Japan (%)</b>	<b>United Kingdom (%)</b>
Direct Method	43	58	64
Step method	3	27	6
Reciprocal Method	5	10	14
Other Method	14	1	8
Not allocated	34	4	8
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>

*Source Blayney and Yokoyama (1991)*



In another study by Drury et al (1993) on methods used by UK organizations to allocate non-manufacturing overheads to products, the following results were obtained:

<b>Method</b>	<b>Percentages</b>
Allocation as percentage to total manufacturing cost	32
Direct labour hours (cost method)	25
Percentage of total selling price	12
Non manufacturing overhead, not traced to product	23
Others method	<u>8</u>
	<b><u>100%</u></b>

## **CHAPTER 3**

### **3.0 RESEARCH METHODOLOGY**

#### **3.1 Research Design**

This chapter highlights procedures adopted to achieve the objectives of the study and thus address the research problem. It explains the type of data used, population of interest, sampling technique, sample size taken for the study and methods of data collection and analysis

This was a descriptive survey aimed at determining how Kenyan manufacturing companies allocate their fixed overheads. A sample was selected using stratified random sampling technique. This approach was considered appropriate since the population of interest was too large for each element to be considered. The stratified random sampling technique was adopted since manufacturing companies differ in terms of products they produce, which also differ in resource consumption. Thus to ensure that the sample was representative in the light of these product differences, stratified random sampling technique was considered more appropriate. The survey provided a basis of exploring the research question.

#### **3.2 Population**

The population of interest in this study comprised of manufacturing companies four hundred and seventy five manufacturing companies as listed by Kenya Association of Manufacturers at time of the study. This is because the problem of cost allocation is most felt in the multi-product manufacturing set-ups.

#### **3.3 Sample**

The sampling frame for this survey was list of manufacturing companies maintained by Kenya Association of Manufacturers. A sample of 50 companies out of a total of 475 companies was picked for this survey using stratified random sampling technique

Because of time and resource constraints, only companies in Nairobi City were considered.

Stratification was based on the listing of manufacturing companies in Kenya maintained by Kenya Association of Manufacturers. The following formula was used to determine the number of companies in each stratum to pick: -

$$n_i = \frac{n \times N_i}{N}$$

Where: N= total population

$N_i$ =stratum population

$n_i$ = stratum sample size

n=sample size desired

### **3.4 Data Collection Methods**

The survey utilized primary data collected using a structured questionnaire with closed-type questions and some few open-ended questions. The questionnaire was directed at corporate finance managers, management accountants or chief accountants because they are concerned with the allocation of overheads in corporate organizations. The questionnaire was administered through drop and pick system.

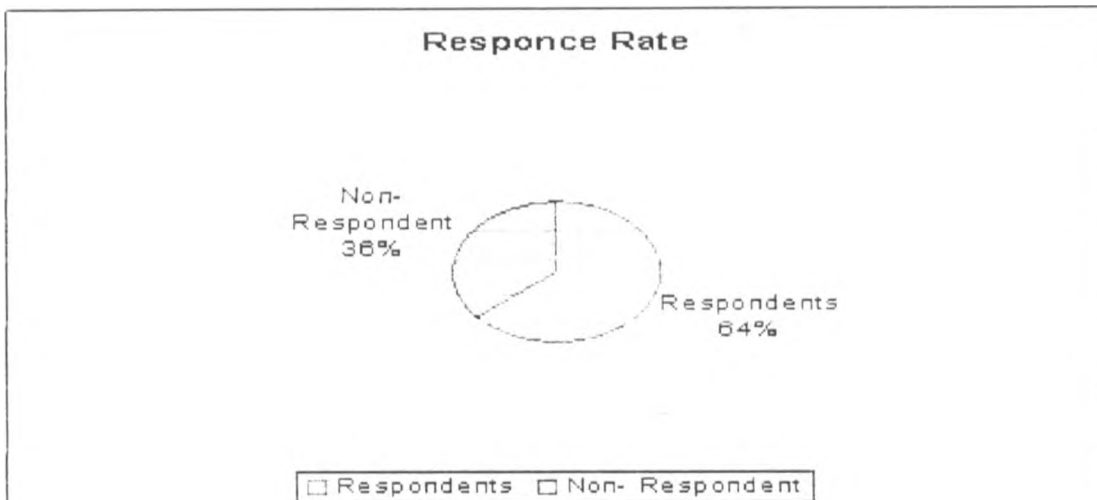
### **3.5 Data Analysis**

Descriptive statistics including total scores, mean score and proportions were used to analyze data. For presentation purposes, summary statistics including tables and percentages was used.

## CHAPTER 4

### 4.0 DATA ANALYSIS AND FINDINGS

In this chapter, data obtained from respondents are presented and summarized using tables, percentages, averages and descriptive statistics. A total of 32 manufacturing companies responded out of the expected 50 companies. This represents a 64% response rate, as indicated in the pie chart.



As shown in table 1, more than 90 % of the companies surveyed indicated that they produce more than 1 product. In particular, 37.5% produce between 2 and 10 products, while 53.1% produce more than 10 products. As noted in the literature, the more the number of products, the greater is the need for cost allocation.

**Table 1: Number of Products Produced**

	Frequency	Percent	Valid Percent	Cumulative Percent
One product	3	9.4	9.4	9.4
Between 2& 10	12	37.5	37.5	46.9
More than 10	17	53.1	53.1	100.0
Total	32	100.0	100.0	

*Source: Research Data*

For the companies that produce more than one product, 90.6% noted that those products consume indirect resources at different rates and only 9.4 noted that they consume indirect resources at the same rate. As such, proper cost allocation is crucial if managers are to make important decisions, for example concerning prices of different products. These findings are summarized in table II.

**Table II: Rate of Indirect Resource Usage**

	Frequency	Percent	Valid Percent	Cumulative Percent
Same Rate	3	9.4	9.4	9.4
Different Rate	29	90.6	90.6	100.0
Total	32	100.0	100.0	

*Source: Research Data*

Majority of the companies surveyed indicated that they do allocate fixed overheads to products or departments as shown in table (iii). It can be seen that 81.3% of the companies allocate overheads, while only 18.7% do not. These findings corroborate with the literature that cost allocation is a pervasive problem facing corporate organizations.

**Table III: Companies Allocating Overheads to Products/ Operating Department**

	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	26	81.3	81.3	81.3
No	6	18.8	18.8	100.0
Total	32	100.0	100.0	

*Source: Research Data*

Companies were asked to rate different purposes or roles of cost allocation and tables IV to VI summarizes the results obtained. As shown in table IV, the role of cost allocation as a source of information for managerial decision-making was rated very important by 90.6% and important by 9.4%. The role of cost allocation in internal performance measurement of department or products was rated very important by 75% of the respondents and important by 25% of the respondents.

**Table IV: Importance of Cost Allocation as an information source for Managerial Decision Making**

	Frequency	Percent	Valid Percent	Cumulative Percent
Very Important	29	90.6	90.6	90.6
Important	3	9.4	9.4	100.0
Total	32	100.0	100.0	

*Source: Research Data*

The importance of cost allocation in fulfilling external financial reporting requirements, for example, stock valuation, was rated very important by 37.5%, important by 43.8%, not important by 9.4%, and irrelevant by 9.4% of the respondents. The role of cost allocation in creating awareness of indirect costs to profit center managers was rated very important by 28.1%, important by 62.5% and not important by 9.4% of the respondents. These are summarized in the table below.

**Table V: Importance Cost Allocation in External Financial accounting requirements.**

	Frequency	Percent	Valid Percent	Cumulative Percent
Very Important	12	37.5	37.5	37.5
Important	14	43.8	43.8	81.3
Not Important	3	9.4	9.4	90.6
Irrelevant	3	9.4	9.4	100.0
Total	32	100.0	100.0	

*Source: Research Data*

The role of cost allocation in promoting effective resource usage and in promoting the use of central services by departmental heads was rated very important by 37.5% and 18.8% respectively by respondents. These roles of cost allocation were rated important by 53.1% and 62.5% respectively by respondents. Those who rated these two roles as not important were 9.4% and 18.8% respectively. These findings are summarized in below;

**Table VI: Importance Cost Allocation in promoting effective resource usage.**

	Frequency	Percent	Valid Percent	Cumulative Percent
Very Important	12	37.5	37.5	37.5
Important	17	53.1	53.1	90.6
Not Important	3	9.4	9.4	100.0
Total	32	100.0	100.0	

*Source: Research Data*

#### **4.1 Cost Centers**

As shown in table VII, 43.8% of the companies indicated that they use less than six cost centers, 28.1% use between 6 and 10, while another 28.1% use more than 10 cost centers.

**Table VII: Number of cost centers used by companies**

	Frequency	Percent	Valid Percent	Cumulative Percent
Less than 6	14	43.8	43.8	43.8
Between 6 & 10	9	28.1	28.1	71.9
More than 10	9	28.1	28.1	100.0
Total	32	100.0	100.0	

*Source: Research Data*

The average number of cost centers was found to be two (2) cost centers per company.

#### **4.2 Overhead Application Rates**

To allocate fixed overheads, 25% of the companies indicated that they use single plant wide rate, 31.3% use between 2 and 5 application rates, 18.8% use between 6 and 10, 12.5 % use between 11 and 15 application rates, and another 12.5% use more than 15 application rates. These findings are summarized in table VIII below;

**Table VIII: The number of Overhead Application Rates used**

	Frequency	Percent	Valid Percent	Cumulative Percent
Single	8	25.0	25.0	25.0
Between 2 & 5	10	31.3	31.3	56.3
Between 6 & 10	6	18.8	18.8	75.0
Between 11 & 15	4	12.5	12.5	87.5
More than 15	4	12.5	12.5	100.0
Total	32	100.0	100.0	

*Source: Research Data*

The average number of application rates was found to be three (3).

For the companies that use more than one overhead application rates, 56.3% indicated that each cost center has its own overhead application rate, 40.6% indicated that an overhead application rate is determine for a group of cost centers. 18.8% of the companies use an overhead application rate for each machine, while 56.3% use an application rate for groups of machines. Only 9.4% of the companies use an application rate for each activity performed. These findings are summarized in table IX to table X respectively.

**Table IX: The number of Companies using Application Rate for each Cost Center**

	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	18	56.3	56.3	56.3
No	14	43.8	43.8	100.0
Total	32	100.0	100.0	

*Source: Research Data*

**Table X: The number of Companies using Application Rate For a group Of Cost Centers**

	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	13	40.6	40.6	40.6
No	19	59.4	59.4	100.0
Total	32	100.0	100.0	

*Source: Research Data*



**Table XI: The number of Companies Using Application Rate for each Machine**

	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	6	18.8	18.8	18.8
No	26	81.3	81.3	100.0
Total	32	100.0	100.0	

*Source: Research Data*

**Table XII: The number of Companies using Application Rate For a group of Machines**

	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	18	56.3	56.3	56.3
No	14	43.8	43.8	100.0
Total	32	100.0	100.0	

*Source: Research Data*

### **4.3 Allocation Bases Used**

Companies were asked to name the allocation base that they use in allocating their fixed overhead costs, and results are presented in table XII to XVI. As shown, only 18.8% use direct labor hours, 9.4% of the companies use machine hours, 31.3% use direct material costs, 62.5% use units of output and none of the companies use prime costs as an allocation basis.

**Table XII: Companies using Direct Labour Hours as an Allocate Base**

	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	6	18.8	18.8	18.8
No	26	81.3	81.3	100.0
Total	32	100.0	100.0	

*Source: Research Data*

**Table XIII: Companies using Machine Hours as an Allocate Base**

	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	3	9.4	9.4	9.4
No	29	90.6	90.6	100.0
Total	32	100.0	100.0	

Source: Research Data

**Table XIV: Companies using Direct Material Cost as an Allocate Base**

	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	10	31.3	31.3	31.3
No	22	68.8	68.8	100.0
Total	32	100.0	100.0	

Source: Research Data

**Table xv: Use of Prime cost as an allocate base**

	Frequency	Percent	Valid Percent	Cumulative Percent
No	32	100.0	100.0	100.0

Source: Research Data

**Table xvi: Use of Activities Performed as an Allocate Base**

	Frequency	Percent	Valid Percent	Cumulative Percent
No	32	100.0	100.0	100.0

Source: Research Data

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#### 4.4 Choice of Activity Level

To determine overhead application rate, a company needs to determine the activity (allocation base) level to use and level of overhead to use. 18.8% of the respondents indicated that they use budgeted level of the allocation base, while 81.3% use actual level of the allocation base. These findings are summarized in the table below

**Table XVII: Activity Levels Used to determine Overhead Application Rate**

	Frequency	Percent	Valid Percent	Cumulative Percent
Budgeted Level	6	18.8	18.8	18.8
Actual level	26	81.3	81.3	100.0
Total	32	100.0	100.0	

Source: Research Data

Use of budgeted allocation base or overhead levels lead to the problem of dealing with over or under application of overheads. Companies were asked to indicate how they deal with this problem, and as shown in table XVIII, all companies that use budgeted level write off under -or -over recovery of overheads through profit and loss account.

**Table XVIII: How Companies deal with Over or Under Recovery of Overheads**

	Frequency	Percent	Valid Percent	Cumulative Percent
Written off against Profits or Loss for the Period	6	18.8	18.8	18.8
Not Applicable	26	81.3	81.3	100.0
Total	32	100.0	100.0	

Source: Research Data

## 4.5 Service Department cost Allocation

As shown in table XIX, 56.3% of the respondents indicated that they allocate service department costs, while 43.8% do not allocate service department costs.

**Table XIX: Companies Allocating Support/Service Department Costs**

	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	18	56.3	56.3	56.3
No	14	43.8	43.8	100.0
Total	32	100.0	100.0	

Source: Research Data

To allocate service department cost, 46.6% indicated that they use direct method, and 9.4% use indirect method. No company uses simultaneous equations to allocate service department costs to other departments. These findings are tabulated below:

**Table XX: Methods used In Allocating Support/Service Department Costs**

	Frequency	Percent	Valid Percent	Cumulative Percent
Direct	15	46.9	46.9	46.9
Indirectly	3	9.4	9.4	56.3
Not Applicable	14	43.8	43.8	100.0
Total	32	100.0	100.0	

Source: Research Data

Companies were asked whether they have adopted Activity Based Costing principles, and the results are as summarized in table XXI. As shown, only 18.8% of the respondents indicated that they have adopted Activity Based Costing (ABC) principles.

**Table XXI: Companies that have Employed Activity Based Costing Principles**

	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	6	18.8	18.8	18.8
No	26	81.3	81.3	100.0
Total	32	100.0	100.0	

Source: Research Data

## CHAPTER 5

### 5.0 CONCLUSIONS AND SUGGESTIONS FOR FURTHER RESEARCH

#### 5.1 CONCLUSIONS

The findings of this survey indicate that allocation is a wide spread practice among Kenyan manufacturing companies. However, these findings indicate that majority of these companies still use traditional volume-based cost allocation approaches. Activity Based Costing (ABC) is not yet common amongst Kenyan manufacturers.

The most important reason for cost allocation by manufacturing companies in Kenya is to provide information for managerial decision-making, such as pricing decisions. Other reasons for cost allocation ranked in order of importance; are to fulfill external financial accounting requirements, such as stock valuation for balance sheet purposes, to promote effective resource usage and to create awareness amongst departmental managers on their existence.

The average number of cost centers used by manufacturing companies in Kenya is two (2), while most companies use more than one overhead application rate in cost allocation. Units of output are the most widely used allocation bases. Other allocation bases that are used to a lesser extent are direct labor hours, machine hours, and direct material costs.

81.3% of manufacturing companies in Kenya use actual levels of activities in determining an overhead application rate, thus the problem of dealing with under or over recovery of overheads is not common in Kenya. However, the 18.7% of the companies that use budgeted levels write off under or over recovery of overheads through profit and loss account. Service department cost allocation is also widely practiced by Kenyan manufacturing companies and the most commonly used method is the direct method.

## **5.2 SUGGESTIONS FOR FURTHER RESEARCH**

Findings from this study indicate that 62.5% of the respondents use number of units as an allocation base, 18.8% use direct labor hours, and 9.4% use machine hours as an allocation base. All these allocation bases are categorized in the literature as traditional volume -based and thus, it is concluded that majority of Kenyan manufacturing companies still use traditional volume- based cost allocation approaches. This is despite the fact that modern cost allocation approaches such as Activity Based Costing (ABC) has been in existence since 1980s. There is therefore need to study the reasons behind the low adoption of ABC in Kenya.

Also there is need to undertake a study on how ABC principles can be adopted to small scale manufacturing companies in Kenya.

It is further suggested that a study be done to check whether Kenyan manufacturing companies have experienced any problems resulting from their allocation approaches. For example, sub optimal decision could have resulted from their cost allocation method.

## **5.3 Limitations Of The Study**

This study did not consider the size of the target population yet literature suggests that the size and the sector of various companies affect the choice of cost allocation approaches. For example, Drury (2000), notes that different variables relating to cost structure, competition, existing cost systems, size and product diversity were tested as explanatory factors for the adoption of ABC but only cost structure and size were found to be statistically significant. Drury and Tayles (2000), indicated that company size and business sector had a significant impact on ABC adoption rates. For example, their study indicated that the adoption rates were 45% for the largest organizations and 51% for financial and service organizations. Therefore, the extent to which the results of this study can be generalized is limited, since cost structure and size characteristics of the sampled companies were not considered.

Another problem is that the concept of Activity Based Costing approach, as a cost allocation approach has not been understood in Kenya. Thus, there was inconsistency between the proportions of companies that have Adopted Activity Based Costing (ABC) principles and the proportion of companies using number of activities as an allocation base. Table xvi indicate that no company is using number of activities as an allocation base, yet table XXI indicate that 18.8% have adopted Activity Based Costing Principles. This should be the same, since essentially, companies that have adopted ABC use number of activities as their allocation base. This inconsistency indicates low understanding of ABC, which in turn affects the reliability of the responses received and thus the results of the study.

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## Appendix1 : Questionnaire

Your company has been selected as one of the respondents for this academic study titled "A Survey of Cost Allocation Practices of Manufacturing Companies in Kenya."

Kindly participate by filling the questionnaire below. This questionnaire is to be filled by people concerned with cost allocation in your company, such as; Management Accountant, Finance Manager or Chief Accountant.

The information obtained will be used for academic purposes only. A soft copy will be avail to your company if you choose to provide the email address at the space provided at the end of this questionnaire.

Thank you for your participation.

### Section One

1. In which industry is your company? .....

2. How many products does your company produce? .....

3. How do you describe your company's products in terms indirect resource consumption? (Tick)

(a) Products produced consume indirect resources at the same rate ( )

(b) Products consume resources at different rates ( )

## Section Two

Use the following key to answer question number 5

### Key:

VI= Very Important

I= Important

N=Not important

IR= Irrelevant

4. Do you allocate fixed overheads to products/ operating departments? (Tick where appropriate)

Yes ( )

No ( )

### Purposes of Cost Allocation

5 How do you rank the following purposes of cost allocation in your company? (Tick where appropriate)

	VI	I	N	IR
Provide useful information for managerial decision-making such as pricing decisions	( )	( )	( )	( )
For internal profit measurement (performance measurement of departments/products)	( )	( )	( )	( )
For external financial accounting requirements such as stock valuation	( )	( )	( )	( )
To create awareness of existence of indirect costs to profit center managers	( )	( )	( )	( )
To promote more effective resource usage	( )	( )	( )	( )
To encourage use of central services by departmental heads	( )	( )	( )	( )

Other purposes- please specify

.....  
.....  
.....  
.....

6. For the purposes of indirect cost analysis, how many cost centers has your company established?

(Tick where applicable)

- Less than 6 ( )
- Between 6 and 10 ( )
- Between 11 and 20 ( )
- More than 20 ( )

7. To allocate fixed overheads to products / departments, which of the following is true regarding your company? (Tick)

- (a) The company has a single plant wide overhead application rate ( )
- (b) The company has more than one overhead application rate ( )

8. If your answer in question 7 above is (b), how many overhead application rates are used by your company? .....

9. To allocate indirect costs, your company uses? (Tick where applicable)

- An application rate for a group of cost centers ( )
- Application rate for each machine ( )
- Application rate for groups of machines ( )
- An application rate for each activity ( )
- Other-please specify;

.....



10. To allocate indirect costs, your company uses which allocation base?

- Direct labour Hours ( )
- Machine hours ( )
- Direct material costs ( )
- Units of output ( )
- Prime costs ( )
- Number of activities performed for each product ( )

Any other-Please specify.....

11. What level of allocation base is used by your company in determining a fixed overhead application rate? (Tick)

- (a) Budgeted level of allocation base ( )
- (b) Actual levels of allocation base used during a period ( )

12. If your answer to question (11) above is (a), how does your company deal with under or over recovery of overheads? (Tick)

- (a) Under or over recovery of overheads is shared among all the products produced during the period ( )
- (b) Any under or over recovery of overheads is carried forward to future periods ( )
- (c) Under or and over recovery of overheads is written-off against profit or loss for the period ( )

13. Does your company allocate support/service department costs? (Tick)

- Yes ( )
- No ( )

14. If your answer to number (13) above is "yes", please describe the method used;  
(Tick where applicable)

- (a) Service department costs are allocated directly to operating departments ( )
- (b) Service department costs are allocated to other service departments, then to operating departments ( )
- (c) Mathematically allocated using simultaneous equations ( )

15. Has your company established Activity Base Costing (ABC) Principles?

Yes ( )

No ( )

What is your company's email address? (OPTIONAL).....

**Thank you for your cooperation.**

## Appendix 2: List of Respondents

Athi River Mining Ltd  
Bamburi Cement Ltd  
Basco Products Ltd  
BAT Kenya Ltd  
Bobmill Industries Ltd  
BOC Kenya Ltd  
Brush Manufacturers Ltd  
Central Glass Industries Ltd  
Coates Brothers (EA) Ltd  
Colgate Palmolive (EA) Ltd  
Cooper Kenya Ltd  
Cosmos Ltd  
East Africa Foundries Ltd  
East Africa Heavy Chemicals Ltd  
East African Portland Cement Ltd.  
Eastern Produce Ltd  
Elys Chemical Industries Ltd  
Firestone East Africa Ltd (Sameer Africa Ltd)  
Global Allied Industries Ltd  
Henkel Kenya Ltd  
Kenya Wine Agencies Ltd  
London Distillers Ltd  
Mareba Enterprises Ltd  
Metal Alloys Ltd  
New KCC Ltd.  
Pipe Manufacturers Ltd  
Rekitt Benckiser (EA) Ltd  
Sadolin Paints Ltd  
Syngenta East Africa Ltd  
Timber Projects Ltd  
Twiga Chemical Industries Ltd  
Unga Ltd