

The rationale of using standard costing in manufacturing organisations in the Eastern Cape when modern alternatives are available

by

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## DECLARATION

This dissertation is an original piece of work, which is made available for photocopying and for inter-library loan. This dissertation has not been previously submitted for assessment to another university for another qualification.

Signed at Port Elizabeth on 3 March 2016

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Signature

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**THE RATIONALE OF USING STANDARD COSTING IN MANUFACTURING  
ORGANISATIONS IN THE EASTERN CAPE WHEN MODERN ALTERNATIVES  
ARE AVAILABLE**

**ABSTRACT:** This paper investigates the rationale of using standard costing in modern manufacturing organisations. Researchers argue that standard costing does not easily fit in with the modern idea of continuous improvement. The benefits and limitations of standard costing and other modern alternative approaches in Eastern Cape manufacturing organisations are examined. Furthermore the factors affecting the accuracy of standards are investigated. Lastly, it is concluded that standard costing is used in Eastern Cape manufacturing organisations and those organisations using standard costing have considered the benefits and limitations.

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## CHAPTER 1

### INTRODUCTION AND BACKGROUND

#### **1.1 INTRODUCTION AND OVERVIEW OF STUDY**

In recent years, factors such as increased global competition and advances in technology have had an impact on whether organisations survive and prosper. In today's intensely competitive local and international market, organisations have to adapt and react quickly to changes in the economic environment. This requires a measurement tool to analyse and make informed decisions.

CIMA (2011: 416) states that the aims of traditional manufacturing organisations were standardisation of product, long production runs, producing acceptable level of quality and slow product development. The main competition has come from Japan and other East Asian economies where the approach to manufacturing was quite different. New manufacturing methods like Just-In-Time (JIT) and Total Quality Management have questioned traditional techniques and involve the introduction of new accounting tools (Collier & Agyei-Ampomah, 2007: 42).

Furthermore, several new techniques have been introduced to make management accounting more relevant to modern production methods. It is argued that standard costing and variance analysis do not easily fit in with the modern idea of continuous improvement (Standard costing in practice, 2005). CIMA (2008) states the two underlying principles of standard costing are that:

- a standard set before a period is a satisfactory measure throughout the period
- the performance is acceptable if it meets this standard

Standard costing using attainable standards emphasises on the achievement of an attainable level of efficiency, rather than the achievement of the highest possible level of efficiency. Furthermore it's argued that the standard costing information process is often slower to provide useful signals to production management than the information obtained from direct monitoring of production activity (Standard costing in practice, 2005).

CIMA (2008) also points out that the following factors make standard costing and variance analysis difficult in practice:

- variance may occur as a result of an error in measuring the actual outcome
- the standard may be out of date because of a change in operating conditions
- variances might result from inefficient or efficient operations
- variances can be caused by random, uncontrollable factors

Standard costing may be summarised as follows (Cost and management accounting, 2013):

- pre-determination of technical data related to production
- pre-determination of standard costs for material labour and overhead
- comparison of actual performance to the standards
- analysis of variances to determine reasons for deviations

It is argued though, while standard costing has been criticized as not relevant in current manufacturing environments; it is still used most widely in manufacturing companies throughout the world (Rao & Bargerstock, 2011). It is added that communicating results using predetermined standards is much faster than waiting to accumulate actual cost data (Dosch & Wilson, 2010). Furthermore CIMA (2005) state the following advantages to using a standard costing system:

- measuring the expected performance at all levels in an organisation
- providing a standardised product costing system that can be used for direct product pricing comparison
- providing a system that may be used for non-financial assessment
- providing a stable platform for taking major management decisions
- providing a standardised system for developing future growth plans

The key to effective standard costing and to avoid counterproductive variance analysis in an organisation are a clear understanding of (Standard costing in practice, 2005):

- how standards have been built up
- what the actual cost contain
- what the analyses will be used for

Establishing a standard costing system enables any deviations from standard cost or budget to be analysed. Standard cost variances provide feedback information designed to help managers control operations in accord with plans they have set prior to the reporting period (CIMA, 2005). The measurement of such deviations is carried out through the technique of variance analysis. Jackson, Sawyers and Jenkins (2009: 370) states the key to variance analysis is management by exception. Management by exception is the process of taking action only when actual results deviate significantly from planned. Variance analysis as stated by CIMA (2008) involves breaking down the total variance to explain:

- how much of it is caused by the usage of resources differing from the standard
- how much is caused by cost of resources differing from the standard

A standard costing system consists of the following four elements (CIMA, 2008):

- setting standards for each operation
- comparing actual with standard performance
- analysing and reporting variances arising from the difference between actual and standard performance
- investigating significant variances and taking appropriate competitive action

Standard costing is generally best suited to organisations with repetitive activities. It is probably most relevant to manufacturing organisations with repetitive production processes (Drury, 2012: 423). Collier and Agyei-Ampomah (2007: 36) state standard costing cannot be applied easily where production is geared around flexibility and customisation. It is difficult to determine a clear standard (Drury, 2012: 423).

According to Drury (2012: 423) control over costs are best effected through action at the point where the cost are incurred. Standards should be set for quantities of material, labour and services to be consumed in performing an operation, rather than the complete product cost standards. Variances from these standards are derived by listing and adding the standard costs of operation required to produce a particular product. Two commonly used approaches are used to set standard costs namely past historical records and engineering studies. Past historical records can be used to estimate labour and material usage and standards can be set based on engineering studies (Drury, 2012: 426).



Engineering studies can provide a detailed study of each operation based on careful specifications of materials, labour and equipment and on controlled observations of operations (Drury, 2012: 426). Drury (2012: 426) states that standard costs should be developed for repetitive operations and product standard costs are derived simply by combining the standards costs from the operations which are necessary to make the product as illustrated in Table 1.1.

**Table 1.1: Standard costs analysed by operations and products**

<u>Responsibility</u> <u>centre</u>	<u>Operation no. and</u> <u>standard cost</u>		<u>Products</u>				<u>Total</u> <u>standard</u>
	<u>No.</u>	<u>Rands</u>	<u>100</u>	<u>101</u>	<u>102</u>	<u>103</u>	<u>Rands</u>
A	1	20	✓		✓		R 40
B	2	30	✓	✓		✓	R 90
C	3	40		✓	✓		R 80
D	4	50	✓	✓	✓	✓	R 200
<i>Standard product cost</i>			R 100	R 120	R 110	R 80	R 410

## 1.2 PROBLEM STATEMENT

As mentioned in the introduction, researchers view standard costing as obsolete and not relevant in modern manufacturing organisations. The underlying principles of standard costing are at odds with modern business trends such as continual improvement and responding to individual customer needs. The problem is that driving down costs is often associated with:

- reduced quality
- the externalisation of costs
- a lack of attention to the individual needs of customers

The purpose of this study is to assess the rationale of using standard costing in manufacturing organisations in the Eastern Cape when modern alternatives are available.

### 1.2.1 Sub-problems

- the relevance of a standard costing in modern manufacturing organisations
- factors influencing the accuracy of standards

### **1.3 RESEARCH OBJECTIVES**

#### **1.3.1 Primary objective**

The primary objective of the study is to assess the rationale of using standard costing in manufacturing organisations in the Eastern Cape when modern alternatives are available.

#### **1.3.2 Secondary objectives**

To achieve the primary objective, the following secondary objectives will be pursued:

- to investigate the relevance of standard costing in modern manufacturing organisations
- to contrast the benefits and drawbacks of modern alternatives
- to investigate the factors that influence the accuracy of standard costs

#### **1.3.3 Research design objectives**

The following research design objectives will be pursued in this study:

- to conduct a literature review on existing, available and current information with regards to standard costing and other modern alternatives
- to construct a questionnaire based on the literature review. The questionnaire will be the primary source of data collection to address the research objectives
- to finalise the questionnaire and seek ethics clearance for the questionnaire from the NMMU Ethics Committee
- to mail the questionnaire to a selected sample of at least 100 respondents at various entities in the Eastern Cape automotive industry
- to analyse and interpret the data and make conclusions

### **1.4 RESEARCH METHODOLOGY**

Research Methodology is a way to systematically solve the research problem. There are two basic approaches to research namely a quantitative approach and a qualitative approach.

The quantitative approach is based on the measurement of quantity or amount. It involves the generation of data in quantitative form which can be subjected to rigorous quantitative analysis in a formal and rigid fashion.

The qualitative approach is concerned with subjective assessment of attitudes, opinions and behaviour. Research is a function of the researcher's insights and impressions. Results generated are either in non-quantitative form or in the form which are not subjected to rigorous quantitative analysis (Welman, Kruger & Mitchell, 2005: 8).

#### **1.4.1 The sample**

A sample of senior staff members from Eastern Cape automotive organisations were selected by using convenience sampling. A structured questionnaire was distributed (electronically) to selected respondents. The design of the questionnaire and the types of questions are covered in Chapter 4. Follow-ups were done to ensure a good response.

#### **1.4.2 Measuring instrument**

A self-constructed scale was used to measure factors influencing accuracy of standard costs. Some questions were linked to a 5 point Likert-type scale ranging from strongly disagree to strongly agree. For the purpose of this study, the questionnaire was the measuring instrument.

### **1.5 DEFINITION OF KEY CONCEPTS**

#### **1.5.1 Variance analysis**

Variance analysis involves comparing actual performance against plan, investigating the causes of the variance and taking corrective action to ensure that targets are achieved (Collier & Agyei-Ampomah, 2007: 40)

### **1.5.2 Standard cost**

The planned unit cost of the product, component or service produced in a period. The standard cost may be determined on a number of bases. The main use of standard costs is in performance measurement, control, stock valuation and in establishment of selling prices (CIMA, 2008).

### **1.5.3 Just-In-Time**

JIT aims to reduce waste by producing the required items, at the required quality and in the required quantities, at the precise time they are required (Drury, 2012: 554).

### **1.5.4 Total Quality Management**

Total Quality Management is a business philosophy aimed at minimising errors and maximising customer satisfaction (CIMA, 2011: 421).

## **1.6 DELIMITATION OF THE RESEARCH**

The delimitation of the study will assist the researcher in making the research topic more manageable. The study has therefore been limited to companies in the Eastern Cape Automotive industry. By delimiting the study, the implication is not that research on the same topic is not needed in other sectors, but that the same principles can be applied universally.

## **1.7 RESEARCHER'S QUALIFICATIONS**

The researcher has the following academic and industry background:

- B Tech Financial Information Systems (2005).

- Senior Inventory Analyst, Management Accounting. Volkswagen Group South Africa (2005 – 2010).
- Senior Costing Analyst, Management Accounting. Volkswagen Group South Africa (2010 – 2012).
- Costing Engineer, Vehicle Profitability Management. Volkswagen Group South Africa (2012 – Currently).

## **1.8 OUTLINE OF THE STUDY**

The study will be divided into 6 Chapters.

- Chapter 1: Deals with the introduction and background to the study, the main problem statement that necessitates the need for the research.
- Chapter 2: Represents an in-depth literature review of the standard costing system. This chapter will detail the nature of a standard costing system, explore the benefits and limitations of standard costing and highlight the factors influencing the accuracy of standards.
- Chapter 3: This chapter will assess the relevance of standard costing in modern manufacturing organisations by contrasting the benefits and drawbacks of other modern alternatives.
- Chapter 4: Will cover the selection of the sample, structure of the questionnaire and the extent of the responses.
- Chapter 5: The biographical information of respondents and empirical findings of the research are presented and discussed.
- Chapter 6: Final summary, conclusions and recommendations for further research are presented.

## **CHAPTER 2**

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## **CHAPTER 2**

### **THE STANDARD COSTING SYSTEM**

## **2.1 INTRODUCTION**

This chapter will discuss the standard costing system. It will look at the history and evolution of standard costing. This chapter will detail the nature of a standard costing system, explore the benefits and limitations of standard costing and highlight the factors influencing the accuracy of standards.

This chapter serves as the theoretical framework for the argument against other modern alternatives in Chapter 3. The sources used for this chapter comes from a literature study in the field of standard costing.

## **2.2 THE HISTORY AND EVOLUTION OF STANDARD COSTING**

Manufacturing was a modest affair before the 18th century. Then the industrial revolution heralded key technological advances. The nature of the technology necessitated the specialisation of skills. The factory work processes became more formal and intensive. The emphasis was on producing standardised, affordable consumer goods. Product specialisation and the division of labour meant that factories became more dehumanised (CIMA, 2005).

The typical standard costing system was developed in the early 1900s. It was the scientific management principles recommended by F.W. Taylor and other prominent engineers who provided the basis for the development of a standard costing system (Morelli & Wiberg, 2002: 18).

The School of Scientific Management reinforced the scrutiny of activity at a micro level, resulting in further standardisation and measurement. This facilitated the widespread use of standard costing, which also required a stable environment with long batch runs and relatively few model changes. Setting standards for the future, typically up to a year ahead, was now possible and, even in large factories, costs could be controlled on a management by exception basis. While these developments were radical, management accounting evolved slowly. Initially it was restricted to product costing for the purposes of controlling costs and valuing stock for profit-reporting purposes rather than setting selling prices (CIMA, 2005).

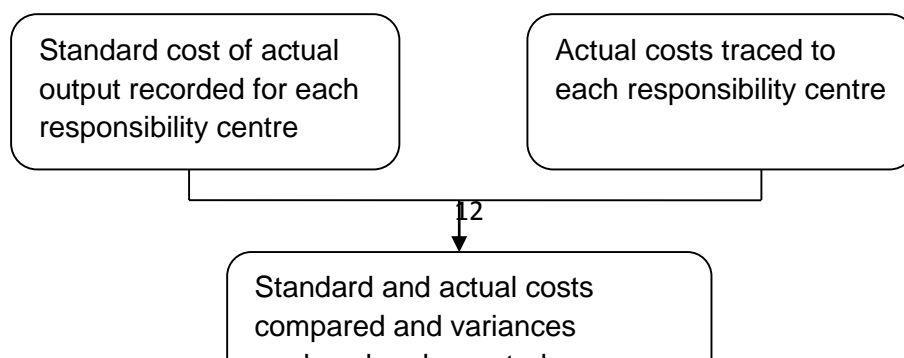
From 1945 to about 1980, consumer demand often outstripped capacity, so manufacturers prospered with a level of inefficiency that would be unthinkable today. Then Japanese factories started making high-quality goods at incredibly low cost. At first, western firms assumed Japan's labour costs were far lower. When it became clear that Japan's edge came from new approaches to production, it was too late for many to adapt.

In the eighties most industries were mechanised, although the equipment required constant maintenance. More recently, manufacturing has been through a second revolution based on new computer-controlled machinery, information technology and working practices. Globalisation has intensified competition and consumers have become more discerning, which means that less-efficient manufacturers must adapt or face extinction (CIMA, 2005).

### 2.3 DEFINITION OF A STANDARD COSTING SYSTEM

Control as stated by Drury (2012: 393) is the process that a firm's activities conforms to its plan and that its objectives are achieved. Objectives and plans specify the desirable behaviour and set out procedures to be followed by members of an organisation ensuring that a firm is operated in a desired manner. Many different mechanisms are used in organisations and the management accounting control system represents only one aspect of the various control mechanisms.

The standard costing system illustrated in Figure 2.1 is a financial control used by organisations which enables deviations from budget to be analysed in detail. According to Drury (2012: 393) standard costing systems are applied in standard cost centres where output can be measured and input required to produce each unit of output can be specified.





### **Figure 2.1 An overview of a standard costing system**

(Source: Drury, 2012: 426)

Drury (2012: 426) argues the allocation of actual cost to products. He states that standard costs represent future target costs, which is preferable to past actual costs for decision making.

Some degree of decentralization is essential for all organisations. Jackson et al. (2009: 406) state decentralization is where decision-making authority is spread throughout the organisation as opposed to being confined to top-level management. Organisations decentralize by creating responsibility centres. The four responsibility centres are cost centres, revenue centres, profit centres and investment centres.

For cost centres, two types of cost centres can be distinguished namely standard cost centre and discretionary expense centre (Drury, 2012: 400). Standard cost centre output can be measured and the input required to produce each unit of output can be specified. Jackson et al. (2009: 408) adds comparing the standard cost to actual cost through variance analysis is the form of control. Discretionary expense centre output cannot be measured in financial terms and there are no clear observable relationships between the input and the output. Control is exercised by ensuring actual expenditure

adheres to budget expenditure for each category and tasks assigned to each centre have been accomplished (Drury, 2012: 400).

Revenue centres are responsibility centres that are mainly accountable for generating sales revenues but not costs (Jackson et al., 2009: 408). Profit centres are responsibility centres that are accountable for both revenue centre and cost centre. Normally are free to set selling prices, choose markets to sell in, make product-mix and output decisions and select suppliers (Drury, 2012: 401). Investment centres are responsible for both sales revenue and cost and, in addition, have responsibility and authority to make capital investments. Performance measures include return on investment and economic value added (Jackson et al., 2009: 409).

Drury (2012: 400) concludes that the creation of responsibility centres is a fundamental part of management accounting control systems.

## **2.4 THE NATURE OF STANDARD COSTING**

Standard costing is a control system that enables any variances from standard cost or budget to be analysed in some detail. This allows for more effective cost control.

CIMA (2008) and Bhattacharyya (2011: 598) state that standard costing may be summarized as follows:

- determination of appropriate standards for each element of cost
- ascertainment of information about actuals and use of standard costs
- comparison of actual costs with standard costs
- analysis of variances to find out the causes of the variances
- reporting to the responsible authority for taking remedial measures

The total standard cost includes direct materials, direct labour and overheads. There are four main types of standards:

### **2.4.1 Current Standard**

They are standards based on current working conditions and are useful when current conditions are abnormal and any other standard would provide meaningless information (Standard Costing, 2012). Bhattacharyya (2011: 600) adds this standard is established for use over a short period of time related to current conditions which reflects the performance that should be attained during the period. These standards are more suitable and realistic for control purposes.

#### **2.4.2 Ideal Standard**

This is the standard which represents a high level of efficiency. Ideal standard is fixed on the assumption that favourable conditions will prevail and management will be at its best. The price paid for materials will be lowest and wastes will be the minimum possible. The labour time for making the production will be at a minimum and rates of wages will also be low. The overheads expenses are also set with maximum efficiency in mind. All the conditions, both internal and external, should be favourable. In practice it is difficult to attain this ideal standard (Bhattacharyya, 2011: 600).

#### **2.4.3 Basic Standard**

A basic standard may be defined as a standard which is established for use for an indefinite period. Basic standard is established for a long period and is not adjusted to the pre-set conditions. The same standard remains in force for a long period. These standards are revised only when there are changes in specification of material and technology productions. It is indeed just like a number against which subsequent process changes can be measured. Basic standard enables the measurement of changes in costs. The deviation between standard cost and actual cost cannot be used as a yardstick for measuring efficiency (Standard Cost, 2012; Bhattacharyya, 2011: 600).

#### **2.4.4 Attainable Standard**

This is the standard, which may be anticipated to be attained under conditions and circumstances prevailing within the organisation (Standard costing and variance analysis, 2011). Attainable standards do not assume ideal operating conditions. They demand a high level of efficiency, but take into account the possible loss of production

time, defects or rework. They are designed to be challenging yet achievable (Atrill & McLaney, 2012: 262). Standard Costing (2012) adds that this standard may motivate employees to work harder.

## **2.5 SETTING STANDARDS**

In using standard costing, management must decide which of the four primary standards they would utilize as a benchmark (Standard Costing: Limitations and disadvantages, 2010). Standards should be of such a nature, that which are attainable, if workers put in some more conscious efforts or become more efficient (Standard costing and variance analysis, 2011). As mentioned in Chapter 1, standards should be set for quantities of material, labour and services to be consumed in performing an operation, rather than the complete product cost standards. Variances from these standards are derived by listing and adding the standard costs of operation required to produce a particular product.

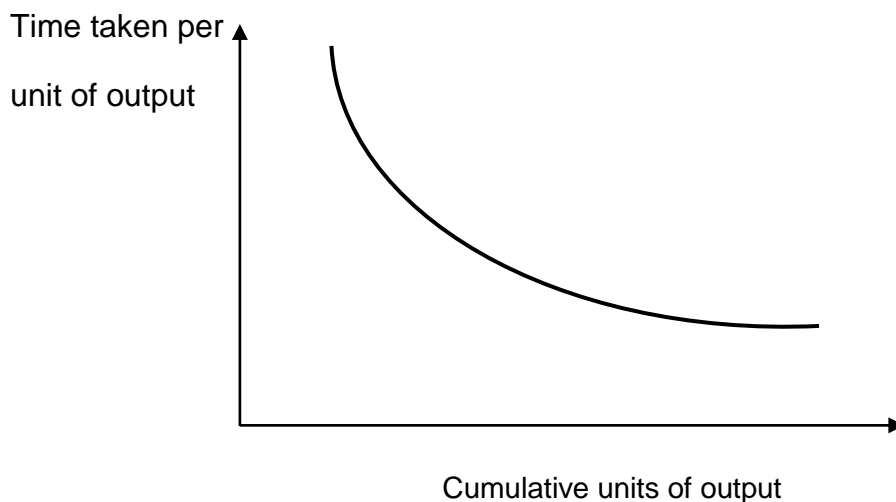
### **2.5.1 Setting Direct Material Standards**

Setting standards for direct materials involves selecting the desired combination of quality, quantity and price. Material quantity standards are usually recorded on a Bill of Material (BOM). This describes and states the required quantity of material for each operation to complete the product. A separate BOM is maintained for each product. The standard material product cost is calculated by multiplying standard quantities by the appropriate standard prices. The standard prices are obtained from the purchasing department. The procedure for purchase of materials, minimum and maximum levels for various materials, discount policy and means of transport are other factors which have bearing on the material cost price (Standard Cost, 2012).

### **2.5.2 Setting Direct Labour Standards**

The most efficient production methods, equipment and operating conditions are standardized (Drury, 2012: 428). Unavoidable delays such as machine breakdowns and routine maintenance are included in the standard time. Atrill and McLaney (2012: 262) suggest where an activity undertaken by direct workers has been unchanged for some time; the standard labour time will stay unchanged as the workers are experienced at performing it. However the learning-curve effect will occur where a new activity is introduced or new workers are involved in performing an existing activity as illustrated by Figure 2.2.

The setting of standard of direct labour is calculated by multiplying standard labour time for producing by the labour rate per hour. Labour rate is affected by the different category of the labour force namely skilled labour, semi-skilled labour and unskilled labour (Standard Cost 2012). Bhattacharyya (2011: 601) adds that the labour rate will also be affected by the basis of methods of wage payment.



**Figure 2.2 The learning-curve effect**

(Source: Atrill & McLaney, 2012: 262)

Each time a task is performed, people become quicker at it. This learning-curve effect become less significant until no further learning occurs.

### **2.5.3 Setting Overhead Standards**

Standard overhead rates are calculated by dividing overhead expenses by direct labour hours or units produced as illustrated in Figure 2.3. The standard overhead cost is based on the hourly overhead rates multiplied by standard hours, hours that should have been used rather than actual hours used (Drury, 2012: 428). Overheads are classified into fixed overheads, variable overheads and semi-variable overheads. Fixed overheads remain the same irrespective of level of production, while variable overheads change in the proportion to production. Semi-variable overheads are neither fixed nor variable. These overheads increase with the increase in production but the rate of increase will be less than the rate of increase in production (Standard Cost, 2012).

a) Standard Overhead Rate	=	$\frac{\text{Standard overhead for the budget period}}{\text{Standard Production for the budget period}}$
b) Standard Variable Overhead Rate	=	$\frac{\text{Standard overhead for the budget period}}{\text{Standard Production for the budget period}}$

**Figure 2.3 The Overhead rate**

(Source: Bhattacharyya, 2011: 602)

#### **2.5.4 Factors that affect the accuracy of standards**

Hsiao (2006: 593) argues that any standard is a double-edged sword to an industry that adopts standard costing. It is an effective tool for the industry to control cost, yet overly rigid standards may give employees a wrong impression that some objective is unattainable. Dunn (2005) states if a predetermined standard, set prior to the budget period, is still realistic under current conditions then the variance report will be of value to the user. However if there has been changes in both internal and external factors then the standards may no longer be realistic and the variances reported will be of little use and no longer relevant for control purposes.

##### **2.5.4.1 Product specifications**

Standards often result from the collective effort of various individuals including management accountants, industrial engineers, human resource managers, production managers and other employees (Atrill & McLaney, 2012: 261). Drury (2012: 427) state that standards are based on product specifications derived from an

intensive study of input quantity necessary for each operation. This study establishes the most suitable materials for each product, based on product design and quality policy, and also the optimal quantity that should be used after taking into account any wastage or loss that is considered inevitable in the production process. Hsiao (2006: 596) argues that inappropriate standards cause standard costing to fail. Loose standards mask unfavourable variance and preclude tracing an ineffective procedure for correction whilst rigid standards will frustrate efficient and capable employees for not achieving the target. The success of standard costing hinges on reliability, accuracy, and acceptance of standards (Bhattacharyya, 2011: 601; Hsiao, 2006: 593).

#### **2.5.4.2 Standard prices**

The standard prices are obtained from the purchasing department and are based on the assumption that the selected suppliers can provide the required quantity and sound quality materials at the most competitive price (Drury, 2012: 428). CIMA (2008) add that these prices should also include economic order quantity, discounts and credit terms offered by suppliers. Changes in the physical productive capacity of the organization or in material prices may indicate that standards need to be revised.

Standards are static in nature, as they are set at one level and applied to a period in which costs may act in a dynamic way (CIMA, 2005: 34). Total costs are unlikely to behave in the linear manner assumed in standard costing and would thus compromise the total standard cost as a realistic target resulting in variances. Hsiao (2006: 596) adds the fundamental challenge faced by industry in establishing standards is how to determine applicable efficiency level while ensuring reliability, accuracy, and acceptance of regulated standards.

#### **2.5.4.3 Elimination of unnecessary elements**

To set labour standards, activities should be analysed by the different operations in order to eliminate any unnecessary elements and to determine the most efficient production method. According to Drury (2012: 426) there is the danger that past inefficiencies will be included using historical records. Standards are set based on average past performance for the same or similar operations. For the standard setting procedure and standards implementation to be successful, employees responsible for meeting the standards must participate in the standard setting process as they are the

best positioned to pinpoint any inaccuracies in the setting of standards (Setting Standards, 2013).

## **2.6 BENEFITS OF STANDARD COSTING**

(Sulaiman, Ahmad and Alwi, 2005: 114) have identified several fields of application when it comes to a standard costing system. Their survey came up with the following purposes why a company may use a standard costing system:

- cost control and performance evaluation
- costing inventories
- computing product cost for decision making
- aid to budgeting

CIMA (2005) gives a broader scope to the use of a standard costing system and argues following principal uses of standard costing:

### **2.6.1 Performance management**

Standards can be used by managers as benchmarks against which the performance of an organisation or of a department can be measured. Furthermore, it is argued that standard costing is not just about costings, any key performance indicator a company uses is a standard and can be incorporated into a standard costing system. The key point is that a standard costing system is more than a tool for accountants and it produces information that it is of direct benefit to the operational managers (An Introduction to Standard Costing, 2013).

### **2.6.2 Cost control**

There are three aspects of a standard costing system that will help to improve the cost control in any organisation. The first is the whole process of setting the standards. Second is the routine reporting of performance and expenditure against these standards and the last is ability to express all variations in performance in monetary terms (An Introduction to Standard Costing, 2013). Drury (2012: 430) state variances are analysed in great detail such as cost, price and quantity elements. Feedback is provided in pinpointing the areas where variances have arisen. One of the major purposes of a standard costing system is to act as a control device. It is a device to



compare actual and planned results and to identify important deviations for corrective actions. Devices of this kind are known as feedback control systems. Drury (2012: 396) add that feedback control involves monitoring outcomes achieved against planned output and taking whatever corrective action necessary if a deviation exists. Collier and Agyei-Ampomah (2007: 7) add that positive or negative feedback refers to the positive or detrimental impact on the organisation whilst double loop feedback indicates that the target is incorrect.

### **2.6.3 Budgeting and planning**

The fact that standard costs are a reliable and convenient source of data makes them valuable for budgeting. The data which standard costs give can easily convert budgeted production schedule into physical and monetary resource requirements (Drury, 2012: 430). Budgets based on standard costs are likely to be more reliable targets than when standard costs are not available. Drury (2012: 426) explains this by arguing that standard costs are based upon careful studies of each operation based on careful specifications of materials, labour and equipment and on controlled observations of operations. However, this argument is only true when engineering studies are used to establish cost standards (Drury, 2012: 426). Standards also provide a foundation for predicting what performance can be expected in the near future. The measurement of such deviations is carried out through the technique of variance analysis.

Bhattacharyya (2011: 603) defines variance analysis as the process of analysing the variance by subdividing the total variance in such a way that management can assign responsibility for off-standard performance. The variance may be favourable or unfavourable. Standard Costing (2012), Okoh and Uzoka (2012: 21) and Bhattacharyya (2011: 603) concur that variance analysis is a powerful tool for:

- identifying those operational activities whose under or over performance is having the greatest impact on profitability
- identifying who is responsible for the under or over performance
- separating the element of the total variance from budget which cannot be controlled by departmental manager from that element for which the departmental manager has total responsibility

- remedial actions to be taken

#### **2.6.4 Generating information for decision making**

Standard cost for decision-making purposes requires estimates. When it comes to pricing, the decisions manager requires estimates of future costs. Standard costing provides planners with a wealth of cost information, easy to obtain and which is accepted as valid as it is used in routine monthly reporting. Standard costs represent target costs based on the elimination of avoidable inefficiencies, are preferred to estimates based on adjusted past costs which may incorporate inefficiencies (Drury, 2012: 430).

### **2.7 LIMITATIONS OF STANDARD COSTING**

In recent years a number of academics have questioned the applicability of traditional accounting systems to the modern manufacturing environment (Bowhill & Lee, 2002:3). Lucas (1997: 32) questioned standard costing and variance analysis as a planning and control technique. Bhattacharyya (2011: 599) mentioned the following are limitations of standard costing:

- standard costing is expensive and a small concern may not meet the cost
- due to lack of technical aspects, it is difficult to establish standards
- standard costing cannot be applied in the case of an organisation where non-standardised products are produced
- responsibility cannot be assigned in the case of uncontrollable variances
- frequent revision is required while insufficient staff is incapable of operating this system

Furthermore, the use of standard costing has been questioned on a number of aspects that can be summarised as follows:

#### **2.7.1 Lack of focus**

In the past when mass production prevailed, companies simply competed against each other who manufactured similar products, on the basis of price. Focussing internally, on the control of costs provided an important means of gaining competitive advantage (Bowhill & Lee, 2002: 7). However, globalization of industries, the presence of new commercial powers, greater sophistication of customers are some of the

causes that require organisations to develop their activities in more dynamic and competitive environments than in the past (De Zoysa & Herath, 2007: 273). Bowhill and Lee (2002: 7) add that a standard costing system gives relatively little attention to the external environment.

### **2.7.2 Lack of accuracy**

The method of charging labour and overheads has been criticised and it is argued that it will lead to inaccuracies (Bowhill & Lee, 2002: 8). Direct labour is a significant aspect of standard costing. This control technique assumes that, the more efficient labour is the more output would be produced. However, a production process that is heavily reliant on other factors, like supplies or machine processing belies this assumption. Lucas (1997: 32) adds that producing in smaller batch sizes will mean that more labour time is spent on machine set-ups and consequently the standard hours of output will be lower relative to the labour hour input, resulting in adverse efficiency variances. In standard costing, labour is usually treated as variable, when it can be fixed or semi-variable. The fixed component of labour is sometimes ignored when using this technique (Standard Costing: Limitations and disadvantages, 2010).

### **2.7.3 Lack of relevance**

A changing production environment may result in a lack of relevance for standard costing variances when assessing manufacturing performance (Bowhill & Lee, 2002: 9). The adoption of advanced manufacturing techniques leads to the diminished need for direct labour input. Bowhill and Lee (2002: 9) argue that attention may be given to variances of less importance.

### **2.7.4 Timeliness**

Management information is useful when it is timely. Variance reports that take a long time to process can significantly reduce the value of standard costing information. Timeliness is a major problem because variance analysis would be easier to perform once the business environment is similar. Trying to get actual cost data too accurate can stall the reports. Furthermore it's argued that the standard costing information process is often slower to provide useful signals to production management than the information obtained from direct monitoring of production activity (Standard costing in

practice, 2005). To avoid this disadvantage, standard cost variance reports should be more frequent and without unnecessary detail (Standard Costing: Limitations and disadvantages, 2010).

## **2.8 CONCLUSION**

This chapter discussed the standard costing system. Critics against standard costing asked the question if it is really useful in modern manufacturing today. Limitations such as focus, relevance, timeliness and accuracy are raised. Lucas (1997: 35) argues that in today's competitive environment the total unit cost is no longer used in order to determine selling price but instead to determine the selling price the market will allow. This target cost per unit is a market-driven cost that has to be achieved if desired profits are to be achieved. Cost management must therefore consist of both cost maintenance and continuous cost improvement. However, standard costing using attainable standards emphasises on the achievement of an attainable level of efficiency, rather than the achievement of the highest possible level of efficiency.

It is argued though, that standard costing provides information for cost control and performance evaluation, costing of inventories, product cost for decision making and information to aid budgeting. While standard costing has several demerits, some of these can be overcome or mitigated by exercising prudence in the use of this technique, and acknowledging its limitations. Furthermore, it's argued that the key to effective standard costing is to have clear understanding of:

- how standards have been built up
- what the actual cost contain
- what the analyses will be used for

## **CHAPTER 3**

### **THE RELEVANCE OF A STANDARD COSTING SYSTEM IN MODERN MANUFACTURING ORGANISATIONS**

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### **CHAPTER 3**

## **THE RELEVANCE OF A STANDARD COSTING SYSTEM IN MODERN MANUFACTURING ORGANISATIONS**

### **3.1 INTRODUCTION**

People and organisations need useful information in order to make good decisions (Accounting information and decisions making, 2011). CIMA (2009) add that enlightened companies are already well on the way to transforming their finance functions to be more efficient and to better support decision making. All forms of accounting, including management accounting, are concerned with collecting and analysing financial information and then communicating this information to those making decisions (Atrill & McLaney, 2012: 16).

Ansari, Bell and the CAM-I Target Cost Core Group (1997: 4) state that organisations use two types of cost management tools. The first category is designed to reduce costs and the second, which includes standard costing, is designed to maintain or contain costs within a predetermined range. As mentioned in Chapter 2, reasons for adopting a standard cost system include managing costs, improving planning and control, facilitating decision making and facilitating product costing (Hansen & Mowen, 2012: 447).

This chapter will investigate the relevance of standard costing in modern manufacturing organisations by contrasting the benefits and drawbacks of other modern alternatives.

### **3.2 MANAGEMENT ACCOUNTING PRACTICES**

Smith, Mat and Djajadikerta (2010: 53) state that manufacturing organisations in Malaysia have experienced changes in their business environment with advances in information, highly competitive environments, new management strategies, and a greater focus on quality and customer services. Ittner and Larcker (2002: 788) defined management accounting practices as a variety of methods specially considered for manufacturing businesses so as to support the organisation's infrastructure and

management accounting processes. Changes in Malaysian management accounting practices are highlighted in Table 3.1. The results in Table 3.2, based on a survey, highlights standard costing as the most popular traditional management accounting technique in Malaysian manufacturing companies.

**Table 3.1: Change in Management Accounting Practices (MAP)**

<b>Change in MAP</b>	<b>Decreased Change %</b>	<b>No Change %</b>	<b>Increased Change %</b>	<b>N/A %</b>
Budgetary control	2%	5%	93%	0%
Full/absorption costing	2%	10%	66%	22%
CVP* analysis	2%	7%	78%	12%
Variable/marginal costing	5%	5%	73%	17%
Standard costing	0%	15%	81%	5%
TQM*	2%	10%	63%	24%
Target costing	2%	10%	61%	27%
ABC*	12%	15%	46%	27%
ABM*	12%	12%	37%	39%
Value chain analysis	2%	17%	54%	27%
Product life cycle analysis	2%	17%	49%	32%
Benchmarking	0%	7%	81%	12%
Product profitability analysis	0%	2%	95%	2%
Customer profitability analysis	2%	10%	71%	17%
Shareholder value analysis	0%	10%	73%	17%

(Source: Smith et al., 2010: 62)

France (2010: 43) states that traditional management accounting techniques like standard costing and budgetary control are still being used. Smith et al. (2010: 61) adds that manufacturing companies in Malaysia were still largely focused on the use of traditional management accounting techniques. Sunarni (2013: 624) added that the perception in Indonesian manufacturing companies were that traditional management accounting tools were more important than contemporary tools. Furthermore, standard costing is one of the practices typical of a practicing management accountant (France, 2010: 43)

**Table 3.2: Management accounting tools**

Management Accounting Tools	Medium-Scale (M)			Big-scale (B)		
	VI	AI	N	VI	AI	N
Budgets	57%	43%	0%	100%	0%	0%
Cost Variance Analysis	40%	57%	3%	50%	44%	6%
Standard Costing	33%	63%	3%	50%	44%	6%
Activity Based Costing	23%	73%	3%	38%	50%	13%
Balance Scorecard	27%	63%	10%	25%	56%	19%
Total Quality Management	43%	57%	0%	25%	56%	19%
Business Forecasting	30%	67%	3%	25%	56%	19%
Just-In-Time	40%	30%	20%	31%	44%	25%
Cost Driver analysis	23%	63%	13%	25%	63%	13%
Target Costing	33%	67%	0%	44%	56%	0%
Value added analysis	10%	73%	17%	25%	56%	19%

Notes: VI = Vitally Important, AI = Average Important, N = Negligible.

(Source: Sunarni, 2013: 622)

Budgets, cost variance analysis and standard costing were rated top three most important management accounting tools in big scale manufacturing organisations in Indonesia as seen in Table 3.2. O’Dea and Pierce (1998: 8) concur with this finding based on their questionnaire to management accountants in manufacturing organisations in Ireland. These results illustrate the continued use of traditional management accounting practices, such as standard costing, in manufacturing organisations in Malaysia, Indonesia and Ireland.

### **3.3 IS STANDARD COSTING STILL RELEVANT?**

With the advent and wide use of methods such as Activity Based Costing (ABC), (JIT), the balanced scorecard, and target costing, a number of researchers had predicted the demise of standard costing and variance analysis on the grounds that these tools had become disconnected from actual practices at the industry level where an intense competitive environment often requires a higher level of sophistication in costing systems (Rao & Marie, 2010: 1).



However, standard costing are experiencing common use in countries as diverse as the United Arab Emirates, the United Kingdom and Malaysia. The results as illustrated in Table 3.3 for the industrial-sector companies in Dubai is consistent with those of the other countries studied, implying that standard costing has not become obsolete among industrial companies in Dubai.

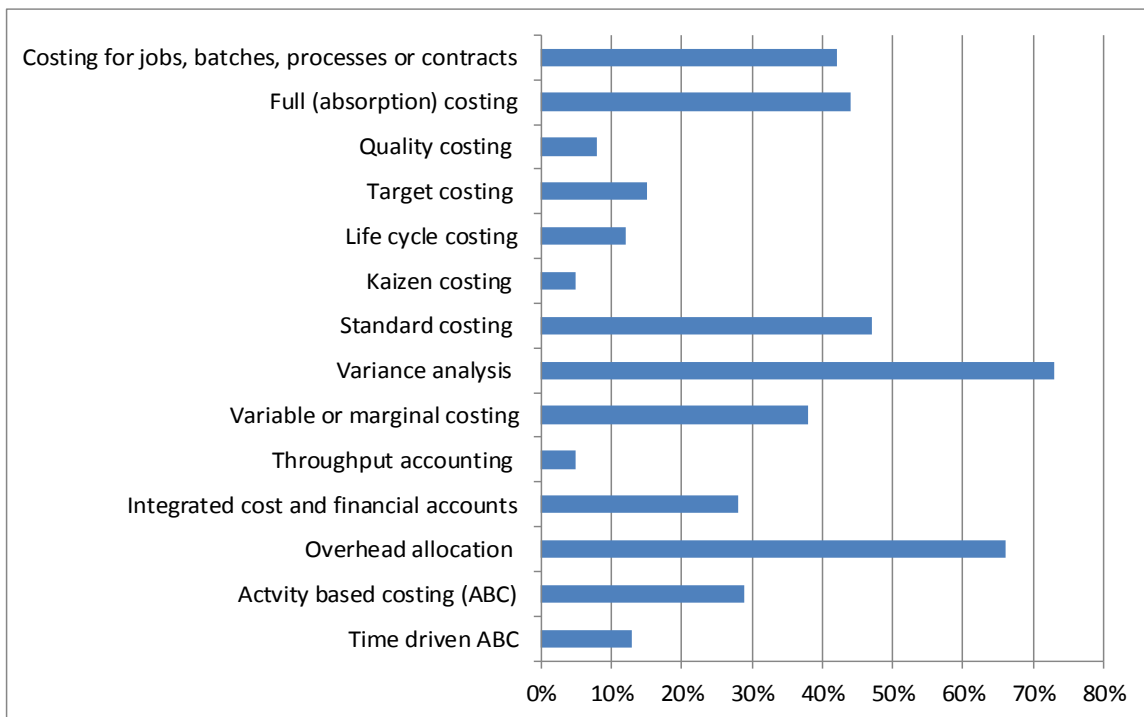
**Table 3.3: The extent to which companies use standard costing**

	<u>Dubai</u>		<u>Malaysia</u>		<u>New Zealand</u>	<u>United Kingdom</u>
	<u>Industrial</u>	<u>Service</u>	<u>Japanese</u>	<u>Local</u>		
<b>Yes</b>	77%	39%	76%	70%	73%	76%
<b>No</b>	23%	61%	24%	30%	27%	24%
<b>Total</b>	100%	100%	100%	100%	100%	100%

(Source: Roa & Marie, 2010: 4)

Figure 3.1 shows the relative popularity of costing tools. The more traditional tools of variance analysis and standard costing remain in the top 3 most popular costing tools. Furthermore, KPMG (2010) add that all companies surveyed in the United Kingdom in 2009, use standard costs and variances to value inventory for statutory purposes, for management reporting purposes and for performance measurement.

Standard costing needs to be considered in a wider framework of Business Intelligence (BI) where companies are seeking to improve performance and competitiveness (KPMG, 2010). The term business intelligence is often used to describe the technical architecture of systems that extract, assemble, store and access data to provide reports and analysis. It can also be used to describe the reporting and analysis applications or performance management tools at the top of this 'stack'. But BI is not just about hardware and software. It is about a company wide recognition that a company's data is an important strategic asset that can yield valuable management information and implement change so that this information is used to improve decision making (Improving decision making in organisations: Unlocking business intelligence, 2009: 4). BI has the potential to speed up standard accounting processes and allow a wider range of data to be considered and insightful analysis to be conducted and presented (CIMA, 2009).



**Figure 3.1 Popularity of costing tools**

(Source: Management accounting tools for today and tomorrow, 2009: 11)

### 3.4 OTHER COST ACCOUNTING APPROACHES

Even though traditional, full absorption costing is nearly a century old, it is still being utilized by the majority of companies. However, proponents of other costing methods argue the following reasons why standard costing is no longer applicable (Kinzel, 2011):

- standard costing was developed for the production of homogeneous products
- to use a standard costing system the product should incur large direct costs compared to indirect costs

- standard costing was developed because there was a limited ability to collect data

Several new techniques have been introduced to make management accounting more relevant to modern production methods. These include ABC, lean organisation and target costing.

### 3.4.1 Lean organisation

The concept of being competitive in industry has changed significantly in recent years. The change in the manufacturing environment led to the type of information and control systems that must be employed by entities to be altered (CIMA, 2011: 416).

**Table 3.4: Changing manufacturing philosophy**

<b><u>Traditional manufacturing</u></b>	<b><u>Modern manufacturing</u></b>
Standardisation of product	Globalisation
Long production runs	Competition
Acceptable level of quality	JIT and TQM
Slow product development	Intelligent machines

(Source: CIMA, 2011: 416)

The lean philosophy involves the complete commitment from every level of the organisation. Leonard and Pakdil (2014: 4587) add that successful lean implementation for competitive advantage requires organisations to apply lean principles in all organisational functions, including accounting, sales and marketing, and human resources. The overall goal of lean is the lasting improvement in company profitability underpinning high performance (Bhasin 2013: 537). Karim and Arif-Uz-Zaman (2013: 170) and Pettersen (2009: 127) add the target is to incorporate less human effort, less inventory, less time to develop products, and less space to become highly responsive to customer demand while producing top quality products in the most efficient and economic manner possible. Bhasin (2013: 543) states the culture of the organisation needs to assist lean to flourish. This entails employee empowerment, leadership and communication systems facilitating the lean initiative.

According to CIMA (2011: 417), the main competition has come from East Asian economies where lean manufacturing have been adopted. Lean manufacturing is a philosophy of management based on cutting out waste and unnecessary activities. These wastes are commonly referred to as non-valued-added activities. These wastes include overproduction, waiting, transportation, non-value-added-processing, excess inventory, defects, excess motion and underutilized people (Kilpatrick, 2003).

The utilization of the following lean building blocks will reduce or eliminate these wastes: pull system, kanban, work cells, batch size reduction, total productive maintenance, total quality management, point-of-use-storage, quick changeover, workplace organisation, visual controls and concurrent engineering (Kilpatrick, 2003). Figure 3.2 illustrates the principles, practices and tools of lean accounting.

<b>Principles</b>	<b>Practices</b>	<b>Tools of Lean Accounting</b>
<b>A. Lean and simple business accounting</b>	1. Continuously eliminate waste from the transactions, processes, reports and other accounting methods	a. Value stream mapping current and future state b. Kaizen (lean continuous improvement) c. PDCA problem solving
<b>B. Accounting processes that support lean transformation</b>	1. Management control and continuous improvement	a. Performance Measurement Linkage chart b. Value stream performance boards containing break-through and continuous improvement projects c. Box scores showing value stream performance
	2. Cost management	a. Value stream costing b. Value stream income statements
	3. Customer supplier value and cost management	a. Target costing
<b>C. Clear and timely communication of information</b>	1. Financial reporting	a. "Plain english" financial statements b. Simple, largely cash-based accounting
	2. Visual reporting of financial and non-financial performance measurements	a. Primary reporting using visual performance boards, plant, value stream, administration, etc.
	3. Decision-making	a. Incremental cost and profitability analysis using value stream costing and box scores.
<b>D. Planning from a lean perspective</b>	1. Planning and budgeting	a. Hoshin policy deployment b. Sales, operations and financial planning
	2. Impact on lean improvement	a. Value stream cost and capacity analysis b. Current state and future state value stream maps
	3. Capital planning	a. Incremental impact of capital expenditure on value stream box-score
	4. Invest in people	a. Performance measurements tracking continuous improvement participation. b. Profit sharing
<b>E. Strengthen internal accounting control</b>	1. Internal control based on lean operational controls	a. Transaction elimination matrix Process maps showing control and risks
	2. Inventory valuation	a. Simple methods to value inventory without the requirement for perpetual inventory records.

**Figure 3.2 Principles, practices and tools of lean accounting**

(Source: Baggaley, B. and Maskell, B., 2006: 37)

### **3.4.1.1 Benefits of Lean organisation**

It's argued that some of lean's benefits include (Kilpatrick, 2003):

- lead time reduction
- increased productivity
- work-in-process inventory reduction
- improved quality
- space utilization reduction

Kovacheva (2010: 52) adds that some of the reasons that organisations decide to implement lean strategy include:

- achieving greater quality
- organise corporate wide work teams accountable for their work product
- creating a culture that encourages employees to make suggestions for better ways of fulfilment of performance goals
- focusing on core competences
- reducing company cost structure
- globalizing to a greater degree

### **3.4.1.2 Drawbacks of Lean organisation**

However, not all lean implementations have produced optimum value from the process. Lack of an effective implementation methodology, a clear understanding of lean performance and its measurement are significant reasons for failure of lean practices (Karim & Arif-Uz-Zaman, 2013: 170).

Furthermore, Bhasin (2013: 547) argues the below barriers hinder the adoption of lean:

- insufficient understanding of the potential benefits
- external funding
- lack of internal funding
- insufficient senior management skills to implement lean
- insufficient supervisory skills to implement lean
- insufficient workforce skills to implement lean
- the cost of the investment

Despite the great potential benefit of lean strategies in performance improvement, the inappropriate selection of lean strategies can lead to an increase in waste, cost and production time of a manufacturer.

### **3.4.2 Activity Based Costing**

The concept of ABC was first defined in the late 1980s by Robert Kaplan and William Burns. Initially ABC focused on manufacturing industry where technological developments and productivity improvements had reduced the proportion of direct labour and material costs, but increased the proportion of indirect or overhead costs (CIMA: 2009).

Collier and Agyei-Ampomah (2007: 38) state that ABC is an attempt to identify a more accurate method of allocating overheads to products or services. Cost pools accumulate the cost of business processes, irrespective of the organisational structure of the business. Atrill and McLaney (2012: 145) add that for a manufacturing business, support activities may include storage, inspection and material handling and the cost of the support activities make up the total overhead cost.

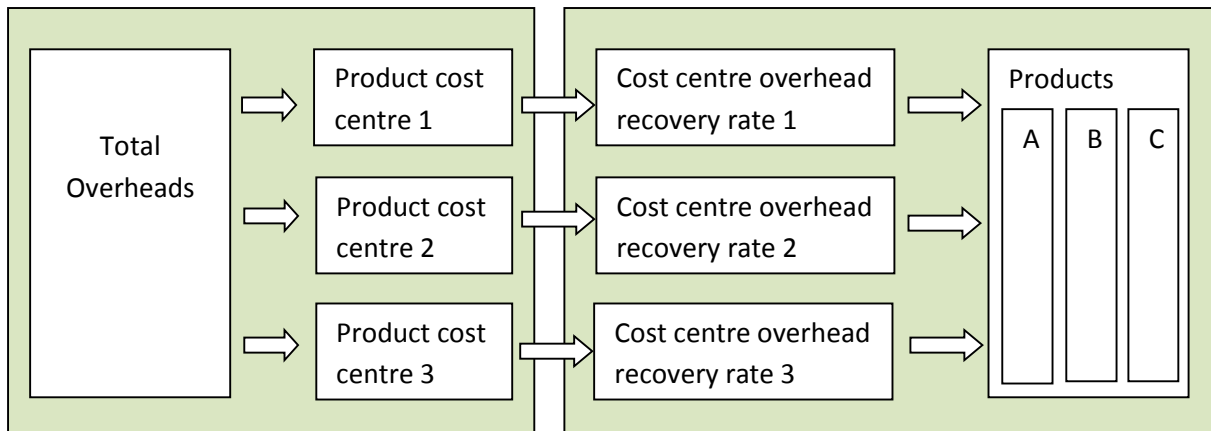
Careful examination of business operations need to be conducted before the implementation of an ABC system. Drury (2012: 258) state that four steps are involved:

- identify the major activities that take place in an organisation
- identification cost drivers and allocation of costs
- determine the cost driver for each major activity
- assign the cost of activities to products according to the product's demand for activities

ABC focusses on activities and the cost of those activities, rather than on products as in the traditional costing systems. It is this feature of ABC that gives management the necessary information to identify opportunities for process improvements and cost reductions (Canada, Sullivan & White, 1996: 35).

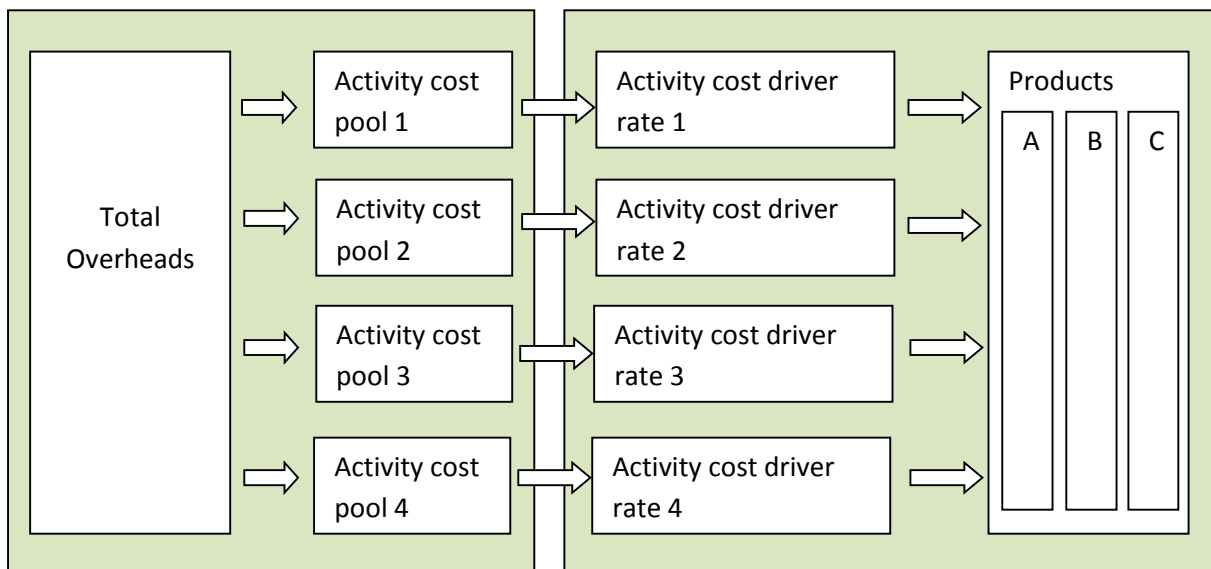
With the traditional approach, as illustrated by Figure 3.3, overheads are first assigned to product cost centres and then absorbed by cost units based on an overhead recovery rate for each cost centre. With ABC based costing, overheads are assigned

to cost pools and then cost units are charged with overheads to the extent that they drive the costs in the various pools as shown by Figure 3.4.



**Figure 3.3 The traditional approach**

(Source: Atrill & McLaney, 2012: 148)



**Figure 3.4 The ABC approach**

(Source: Atrill & McLaney, 2012: 148)

Drury (2012: 472) states that standard costing still has an important role to play in controlling costs of unit-level activities for organisations that have implemented ABC systems. These activities consume resources in proportion to the number of units produced. Variance analysis is most suited to controlling the costs of the unit-level activities but cannot be used to manage all overhead costs.



### **3.4.2.1 Benefits of ABC**

It is argued that the benefits of ABC include:

- the flexibility to provide special reports so that management can take decisions about the costs of designing, selling and delivering a product or service (CIMA, 2009).
- avoiding distortions on product costs that might occur from arbitrary allocation of overhead costs (CIMA, 2009).
- improving profitability by monitoring total lifecycle cost and performance (Brimson, 1998: 20)
- facilitating elimination of waste by providing visibility of non-value added activities (Brimson, 1998: 20)
- providing a more accurate method of costing of products and services (CIMA, 2009).
- allowing for a better and more comprehensive understanding of overheads and what causes them to occur (CIMA, 2009)
- supporting other management techniques such as continuous improvement, scorecards and performance management (CIMA, 2009)

### **3.4.2.2 Drawbacks of ABC**

However, Rasiah (2011: 98) argues that organisations that implement ABC run the risk of the following drawbacks:

- spending too much time, effort, and even money on gathering and analysing data
- exceptionally too many details involved in ABC
- lack of detail records can lead to insufficient data
- accounting system needs to be revamped keep up ABC
- requires a level of exactness that is both difficult to attain and time consuming

CIMA (2009) agree and adds that it can be costly to implement, run and manage an ABC system. Even in ABC some overhead costs are difficult to assign to products and customers. These costs still have to be arbitrarily applied to products and customers.

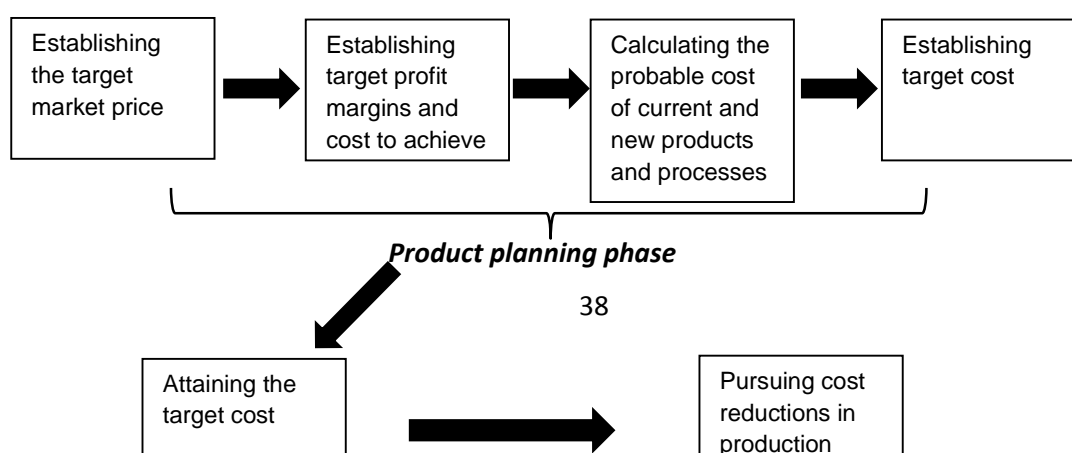
### **3.4.3 Target Costing**

Everaert, Loosveld, Van Acker, Schollier and Sarens (2006: 238) define target costing as:

the process of determining the target cost for products early in the new product development (NPD) process and of supporting the attainment of this target cost during this NPD process, by providing target costing information to motivate the NPD team to realize downstream cost management of new products in order to ensure product profitability when launched.

Target costing is concerned with managing the whole of life costs during the design phase. This technique was developed in the Japanese automotive industry and is customer orientated (Collier & Agyei-Ampomah, 2007: 45). Mahdi and Sani (2012: 45) outline the basic steps involved in implementing target costing, illustrated in Figure 3.5, as follows:

- establishing the target market price
- establishing the target profit margin and cost to achieve
- calculating the probable cost of current and new products and processes
- establishing the target cost
- attaining the target cost
- pursuing cost reductions once production has started



### **Figure 3.5 Target Costing process**

(Source: Mahdi and Sani, 2012: 45)

The following eight characteristics of target costing are identified by Everaert et al. (2006: 258):

- The target sales price is set during product planning, in a market-oriented way.
- The target profit margin is determined during product planning, based on the strategic profit plan.
- The target cost is set before the NPD process really starts. The target cost is determined based on the subtraction method or the addition method.
- The target cost is subdivided into target costs for components, functions, cost items, designers or suppliers.
- Attainment of the target cost requires a cross-functional team.
- Detailed cost information is provided during NPD to support cost reduction.
- The cost level of the future product is compared with its target cost at different points during NPD.
- A general rule is established that “the target cost can never be exceeded”.

#### **3.4.3.1 Benefits of target costing**

According to Rattray, Lord and Shanahan (2007: 70), target costing assists in making the trade-offs between quality, cost and functionality by ensuring that only products that meet customer requirements and the desired profitability are developed.

The primary reason for the adoption of target costing includes (Target costing in the NHS, 2005):

- the use of target costing to plan or project the costs of products before they are introduced
- to ensure that low-margin products which generate insufficient returns are not introduced

Ratray et al. (2007: 70) and Mahdi and Sani (2012: 45) identify the following target costing benefits:

- will provide analytical techniques to indicate where cost reduction efforts on parts and processes will have most impact, and where commonality and simplification can be increased
- product costs will be defined from the customer's viewpoint; they will include functionality, cost of ownership and manner of delivery
- launch products that improve on previous generations by having reduced prices or improved quality and functionality
- involves staff from all areas in the cost analysis, in which responsibility for managing costs is encouraged
- target costing can become more effective when used within the supply chain, as it increases the possibilities for design changes

Furthermore, Ansari et al. (1997: 12) point out target costing eliminates costly and time-consuming changes required later, by focussing on the design stage.

### **3.4.3.2 Drawbacks of target costing**

Ratray et al. (2007: 73) state the main reason for not using target costing was the view that it was unsuitable for the business. Other reasons included the use of alternative systems or costing being carried out elsewhere in the business.

Furthermore Helms, Ettkin, Baxter and Gordon (2005: 51), add the following barriers to adopt target costing:

- lack of understanding
- team and cross-functional barriers
- irrelevance or fear of the effects
- production detail

Rattray et al. (2007: 71) and Ansari et al. (1997:169 - 170) have identified the following potential problems with target costing:

- Longer development times – an overemphasis on design results in a longer product development cycle and a longer time to market.
- Employee burnout – pressure to attain demanding targets can result in employee burnout.
- Market confusion – attending to customer requirements can cause additional features to be added on resulting in the rapid increase in product models, which may lead to market confusion.
- Organisational conflict – one department may feel that they are shouldering too much of responsibility, which leads to internal conflict.

Davila and Wouters (2004: 15) point out the following potential limitations of target costing:

- target costing focuses attention on cost drivers and away from revenue drivers
- target costing is too time consuming
- target costing is too linear and bureaucratic
- target costing is too detailed

### **3.5 CONCLUSION**

Rana and Sheikh (2014: 268) argue that traditional management accounting focusses more towards financial aspects along with the performance measurement while modern management accounting processes emphasizes on financial as well as non-financial management of processes using latest production and financial tools.

The study of the different methods identified features, benefits and drawbacks of all the approaches. The more traditional approach may be easier to use but sometimes less accurate by generating information supporting wrong decisions. ABC advocates using a more structured way of allocating costs, but can be costly and require the use of many resources. Lean accounting supports the modern production philosophy generating better information for manufacturing decision making. However, to gain the full benefit, the organisation has to be organised according to the lean philosophy. Target costing are concerned only with products that meet customer requirements and

the desired profitability by focussing on the design stage. This focus can cause employee burnout and be too time consuming.

Worldwide surveys of management accounting practices have shown a relatively low incidence of adoption of new techniques. Some of the reasons for non-adoption of modern alternatives can be summarised as a lack of understanding. This refers to the lack of understanding of the accounting approach, how to use effectively and understanding its potential benefits. O’Dea and Pierce (1998: 15) argue that there is little evidence of abandonment of traditional techniques on the introduction of new ones. Shifts in management philosophies will continue to occur and new management accounting techniques will emerge as technological advances takes place.

This chapter assessed the relevance of standard costing in modern manufacturing organisations by contrasting the benefits and drawbacks of other modern alternatives.

## **CHAPTER 4**

### **RESEARCH DESIGN AND METHODOLOGY**

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## **CHAPTER 4**

### **RESEARCH DESIGN AND METHODOLOGY**

#### **4.1 INTRODUCTION**

This chapter presents an overview of the various research methods in general and outlines the specific methodology used for this research study. The questionnaire design, selection of the sample, administration of the questionnaire and an actual account of the actual response rate are covered in this chapter.

## **4.2 RESEARCH DESIGN**

### **4.2.1 The Concept of Research**

Pellisier (2007: 6) describes research as an active, diligent and systematic process of enquiry in order to discover, interpret or revise facts, events, behaviours, theories or applications with the help of such facts, laws or theories. Welman et al. (2005: 2) define research as a process that involves obtaining scientific knowledge by means of various objective methods and procedures.

Collis and Hussey (2009: 3) state that the purpose of research is to:

- review or synthesise literature
- investigate existing situations and/or problems
- provide solutions to problems
- explore more general issues
- construct or create new knowledge
- explain new phenomenon
- generate new knowledge
- a combination of any of the above

Leedy and Ormrod (2010: 2) point out that the following traits are typical of research:

- research stems from an identified research question or problem
- research needs a clear goal
- research divides the main problem into smaller sub-problems
- research is guided by the research problem
- research must have specific project-plans
- research requires the collection and interpretation of data in order to solve the identified problem

### **4.2.2 The Concept of Research Design**

Mouton (2011: 55) states research design is the blueprint of the prospective research study at hand. Welman et al. (2005: 52) define research design as the plan according to which we obtain research participants and collect information from them. Research design is a grand plan of approach to a research topic (Greener, 2008).



Kothari (2004: 32) states a research design must contain:

- a clear statement of the research problem
- procedures and techniques to be used for gathering information
- the population to be studied
- methods to be used in processing and analysing data

The design helps the researcher to organise his ideas in a form whereby it will be possible for him to look for flaws and inadequacies. In the absence of such a course of action, it will be difficult for the critic to provide a comprehensive review of the proposed study (Kothari, 2004: 32).

### 4.3 RESEARCH APPROACH

Johnson and Christensen (2008: 33) state that three major research approaches, namely qualitative, quantitative and mixed research, appear on the research continuum. The characteristics of these research approaches are briefly discussed below together with a detailed comparison between qualitative and quantitative approaches in Table 4.1.

**Table 4.1: Differences between qualitative and quantitative research**

<b>Difference with respect to:</b>	<b>Quantitative research</b>	<b>Qualitative research</b>
<b>Underpinning philosophy</b>	Rationalism	Empiricism
<b>Approach to enquiry</b>	Structured/ rigid/ predetermined methodology	Unstructured/ flexible/ open methodology
<b>Main purpose of investigation</b>	To quantify extent of variation in a phenomenon, issue, situation, etc.	To describe variation in a phenomenon, issue, situation, etc.

<b>Measurement of variables</b>	Emphasis on some form of either measurement or classification of variables	Emphasis on description of variables
<b>Sample size</b>	Emphasis on greater sample size	Fewer cases
<b>Focus of enquiry</b>	Narrows focus in terms of extent, but assembles required information from a greater number of respondents	Covers multiple issues but assembles required information from fewer respondents
<b>Dominant research value</b>	Reliability and objectivity(value-free)	Authenticity but does not claim to be value-free
<b>Dominant research topic</b>	Explains prevalence, incidence, extent, nature of issues, opinions and attitude, discovers regularities and formulates theories	Explores experiences, meanings, perceptions and feelings
<b>Analysis of data</b>	Subjects variables to frequency distributions, cross-tabulations or other statistical procedures	Subjects responses, narratives or observational data to identification of themes and describes these
<b>Communication of findings</b>	Organisation more analytical in nature, drawing inferences and conclusions, and testing magnitude and strength of relationships	Organisation more descriptive and narrative in nature

(Source: Kumar, 2011:38)

#### 4.3.1 Qualitative approach

Welman et al. (2005: 188) state qualitative research is an array of interpretive techniques which seek to describe, decode, translate, and otherwise come to terms with the meaning of naturally occurring phenomena. Creswell (2009: 4) add that qualitative research is a means for exploring and understanding the meaning individuals or groups ascribe to a social or human problem. The process of research involves emerging questions and procedures, data typically collected in the

participant's setting, data analysis inductively building from particulars to general themes, and the researcher making interpretations of the meaning of the data.

Welman et al. (2005: 193) outline the use of five data collection methods used by qualitative research, namely:

#### **4.3.1.1 Case Study Research**

Case study is essentially an intensive investigation of the particular unit under consideration. The object of the case study method is to locate the factors that account for the behaviour-patterns of the given unit as an integrated totality (Kothari, 2004: 113). The term case study does not refer to a specific technique that is applied (Welman et al., 2005: 193).

#### **4.3.1.2 Participant Observation**

Kothari (2004: 96) state if the observer observes by making himself, more or less, a member of the group he is observing so that he can experience what the members of the group experience, the observation is called participant observation. Welman et al. (2005: 194) add that the researcher is required, for an extensive period, to take part in, and report on, daily experiences of members of the group, community or people involved in a process or event.

#### **4.3.1.3 Unstructured, In-depth Interviews**

Welman et al. (2005: 197) state that unstructured interviews are usually employed in explorative research for specific purposes:

- to identify important variables in a particular area
- to formulate penetrating questions on them and
- to generate hypotheses for further investigation

#### **4.3.1.4 Focus Groups**

Focus groups are also described as group in-depth interviews. These groups consist of a small number of individuals drawn together for the purpose of expressing their opinion of a specific set of open questions. The researcher directs the interaction and inquiry in either a very structured or unstructured manner, depending on the aim of the investigation. The aim of such group interviews is not to replace individual interviewing but to gather information that can perhaps not be collected easily by means of individual interviews (Welman et al. 2005: 198).

#### **4.3.1.5 Participatory Research**

According to Welman et al. (2005: 205) participatory research involves the integration of elements such as social investigation, educational work and action in an interrelated process. In participatory research the roles of the researcher and the participant are as follows:

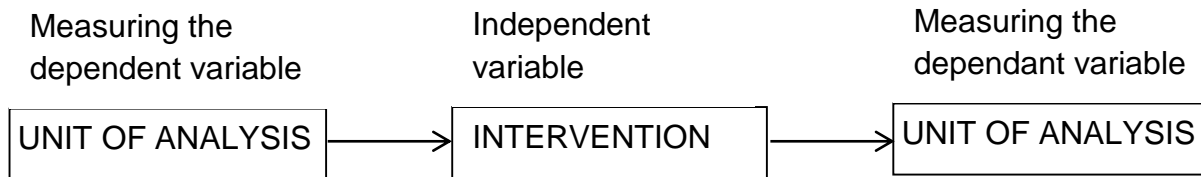
- the participants are actively involved in the planning and implantation of the research outcomes and are thus empowered
- the researcher is dependent on the participation of the research group or individuals

#### **4.3.2 Quantitative approach**

Quantitative research emphasises the measurement and analysis of casual relationships between variables. The purpose of quantitative research is to evaluate objective data consisting of numbers (Welman et al., 2005: 8). Creswell (2009: 4) add that quantitative research is a means for testing objective theories by examining the relationship among variables. These variables, in turn, can be measured, typically on instruments, so that numbered data can be analysed using statistical procedures. Welman et al. (2005: 78) outline the use of three quantitative research approaches:

### 4.3.2.1 Experimental research

All types of experimental research involve some form of intervention. In other words the participants are exposed to something which they would not have been subjected otherwise. The extent to which the intervention has changed or affected the units of analysis, are measured as seen in Figure 4.1.



**Figure 4.1 The effect of the independent variable on the dependent variable**

(Source: Welman et al., 2005: 78)

### 4.3.2.2 Quasi-experimental research

The critical feature of true experimental research is the random assignment of subjects to different treatment groups. The purpose of such assignment is to equate the groups in terms of all known and unknown nuisance variables. Quasi-experimental research differs from true experimental research in that the researcher cannot randomly assign subjects to the different groups. These groups may therefore differ from one another in terms of nuisance variable (Welman et al., 2005: 88).

### 4.3.2.3 Non-experiment research

Neither random assignment nor any planned interventions occur in non-experimental research. In this type of research one or more variables, apart from the independent variable in question, could be the actual source of observed variation in dependent variable/s. It is therefore generally accepted that conclusions about casual relationships may be made with greater confidence (Welman et al., 2005: 92).

### 4.3.3 Mixed research

Mixed research involves philosophical assumptions, the use of qualitative and quantitative approaches, and the mixing of both approaches in a study. Thus, it is more

than simply collecting and analysing both kinds of data; it also involves the use of both approaches in tandem so that the overall strength of a study is greater than either qualitative or quantitative research (Creswell, 2009: 4).

Johnson and Christensen (2008: 35) argue that the use of only quantitative research or qualitative research is seen to be limiting and incomplete for many research questions. Following a mixed research approach, improves the quality of the research and the researcher is less likely to make an error due to the different strengths and weaknesses of the research methods (Johnson and Christensen, 2008: 51).

#### **4.4 APPROPRIATE RESEARCH METHOD**

In order to gain a deeper understanding and to fully answer the questions raised at the beginning of the study, the researcher has chosen to use a combination of qualitative and quantitative approaches. Dichotomous, open-ended and closed-ended questions have been included in the survey.

#### **4.5 SAMPLE SELECTION**

As indicated in Chapter 1, this research study has been restricted to organisations with operations in the Eastern Cape's automotive industry. The population primarily consisted of vehicle manufacturing companies and its major component suppliers.

#### **4.6 STRUCTURE OF THE QUESTIONNAIRE**

The nature of the topic researched in this study dictated the use of a questionnaire survey as the primary research tool. Questionnaires are very structured data collection techniques in which respondents are asked the same set of questions. The questionnaire was developed from the literature review in Chapter 1, Chapter 2 and Chapter 3.

The questionnaire is divided into two sections. Section A is made up of biographical information about the respondents such as their age, job titles, experience and qualifications. Section B consists of questions designed to research both general and specific aspects of standard costing and modern alternatives.

The following types of questions were used in the questionnaire:

- Dichotomous questions. The respondents are offered a choice between two options only, for example “Yes” or “No”
- Open-ended questions. Respondents are allowed to answer in their own words and express themselves freely. This enables respondents to shed more light on their answers and provide more detailed explanations.
- Scaled-response questions. The five point Likert-type scale, ranging from strongly agree to strongly disagree, was used to determine respondents’ level of agreement on a given subject.

#### **4.7 ADMINISTERING THE QUESTIONNAIRE**

The Eastern Cape manufacturing companies were approached telephonically and via e-mail in order to establish the responsible person to whom the questionnaire should be directed to. Once the details of the responsible persons had been established, the questionnaire together with a covering letter and ethics approval letter was e-mailed through to these identified executives on 10 August 2015. The covering letter provided the respondents with the purpose and background of the research project. Further, respondents were requested to return the completed questionnaire by 31 August 2015.

#### **4.8 EXTENT OF RESPONSES**

Responses were sought from different Eastern Cape manufacturing companies. Initially the response rate was relatively slow. By the deadline/return date only fifteen completed questionnaires had been received. After follow-up e-mails and telephone calls, a few more completed questionnaires were received. A few respondents indicated that whilst they were keen to complete the questionnaire, the group’s global policy of divulging information did not allow them to answer the questionnaire. Altogether, 40 correctly completed questionnaires were received. Most of these were received by email and a few by capturing the responses from telephonic discussion.

#### **4.9 CONCLUSION**

This chapter outlined the purpose of research in general and briefly described the difference between quantitative and qualitative research. A mixed research approach,

which is a combination of quantitative and qualitative methods, was found to be the most suitable research strategy for this project. The next chapter addresses the empirical findings of the study.

## **CHAPTER 5**

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## **CHAPTER 5**

### **EMPIRICAL FINDINGS AND PRESENTATION OF RESULTS**

#### **5.1 INTRODUCTION**

This chapter presents an overview of the biographical details of the respondents and the empirical findings of the research objectives. A survey was conducted to assess the rationale of using standard costing in manufacturing organisations in the Eastern Cape when modern alternatives are available. The empirical findings of the study, which are presented with the aid of tables and figures, are based on summaries of the questionnaire responses.

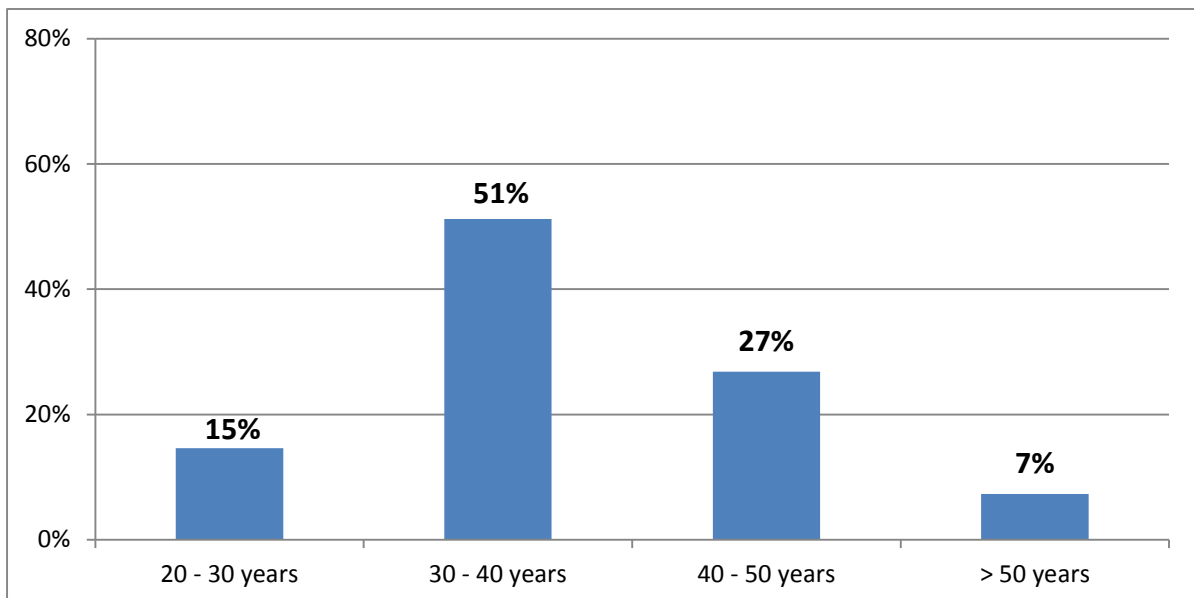
#### **5.2 BIOGRAPHICAL DETAILS OF RESPONDENTS**

Section A of the questionnaire contained four questions aimed at obtaining

certain biographic information about the respondents such as age, job title, the total years of business experience in the financial function and academic background.

### 5.2.1 Current age in years

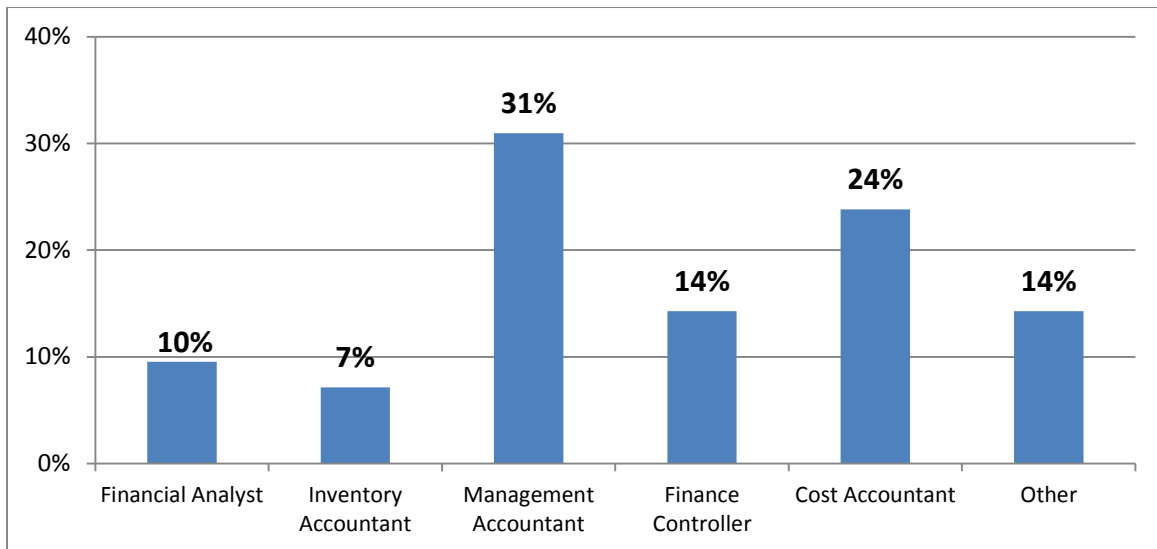
Figure 5.1 shows the distribution of respondents according to their current age in years. A high percentage of the respondents (51%) are between the ages of 30 and 40 years old. 27% of the respondents are between the ages of 40 and 50 years old whilst 13% are between the ages of 20 to 30 years old. The remainder of respondents are over 50 years of age.



**Figure 5.1 Current age in years**

### 5.2.2 Job titles

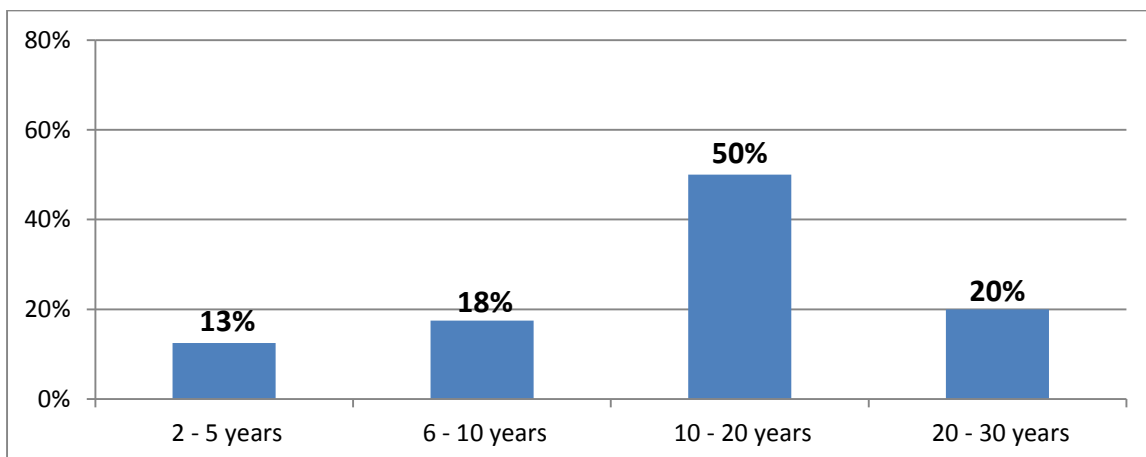
Figure 5.2 shows the distribution of respondents according to their job titles held in their organisation. 55% of total respondents indicated they were either management accountants (31%) or cost accountants (24%). Finance controllers and financial analysts comprised 14% and 10% respectively of total respondents. The remainder of the respondents' job titles were inventory accountant, pricing analyst, business analyst and commercial manager.



**Figure 5.2 Job titles**

### 5.2.3 Number of years business experience in finance function

Figure 5.3 shows the distribution of respondents according to number of year's business experience in the finance function. Half of the respondents (50%) have between 10 and 20 years business experience in the finance function. The remainder of the respondents' business experience in the finance function vary between 20 to 30 years (20%), 6 to 10 years (18%) and 2 to 5 years (13%).

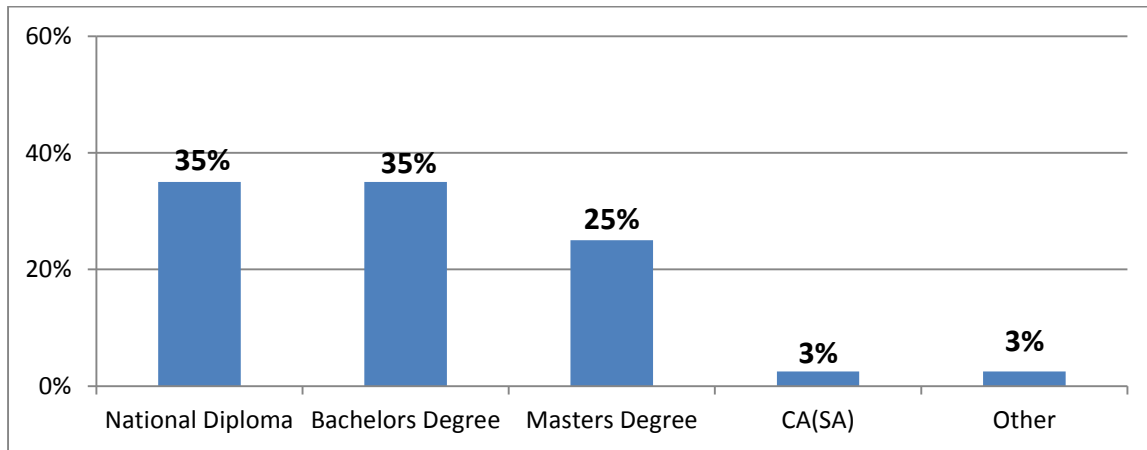


**Figure 5.3 Years of business experience in finance function**

### 5.2.4 Highest academic qualification/ professional association

Figure 5.4 shows the distribution of respondents according to their academic qualifications or professional association they hold. Bachelor's degrees and National

diplomas comprised 35% each of the respondents whilst 25% indicated they have achieved a Master's degree. The remainder of the respondents' academic qualifications were Chartered accountant CA (SA) and Professional accountant (SAIPA).



**Figure 5.4 Highest academic qualification/ professional association**

### **5.3 ACHIEVEMENT OF RESPECTIVE STUDY OBJECTIVES**

The main and sub-objectives of the study are stated in this section, together with the specific questions that were posed to the respondents with regards to the rationale of using standard costing in manufacturing organisations in the Eastern Cape when modern alternatives are available. This is followed by a discussion of the empirical findings for each objective.

#### **5.3.1 Primary Objective: To assess the rationale of using standard costing in manufacturing organisations in the Eastern Cape when modern alternatives are available.**

The literature review in Chapter 2 revealed benefits and limitations when using standard costing. In order to gain insight regarding the benefits and limitations of using standard costing, the following questions were included in the questionnaire to address this objective:

- Q2.4 The following benefits of using standard costing has been identified.
- Q2.5 In your opinion are there any other benefits of standard costing?
- Q2.6 The following factors are considered to be limitations of standard costing.

- Q2.7 In your opinion are there any other limitations or difficulties to use standard costing?

**Q2.4. Indicate level of agreement on benefits of standard costing.**

To assist with the primary objective of this study, respondents were asked to indicate their level of agreement with benefits of standard costing. Table 5.1 reflects the responses for question Q2.4.

**Table 5.1: Summary of responses (expressed in %) relating to benefits of standard costing**

		Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
a	Performance management	2.5%	15.0%	17.5%	40.0%	25.0%
b	Cost control	0.0%	10.0%	17.5%	50.0%	22.5%
c	Budget and planning	0.0%	17.9%	17.9%	46.2%	17.9%
d	Generating information for decision making	2.5%	7.5%	25.0%	30.0%	35.0%

Analyses of responses indicate that all items scored an agreement rate of at least 64% indicating that respondents considered these as benefits of standard costing.

**Q2.5. In your opinion are there any other benefits of standard costing?**

Respondents were requested to indicate whether there are any other benefits of standard costing, not listed in Table 5.1. This open-ended question allowed respondents to answer freely and express their own views. Below is a summary of the responses:

- standard costing can be an indication where further investigation is required
- standard costing can be used in comparative studies
- standard costing can be used as a basis to prepare the forecast

**Q2.6. Indicate level of agreement on limitations of standard costing.**

Respondents were asked to indicate their level of agreement with limitations of standard costing. Table 5.2 reflects the responses for question Q2.6.

**Table 5.2: Summary of responses (expressed in %) relating to limitations of standard costing**

		Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
a	Lack of focus. Standard costing system gives relatively little attention to the external environment.	7.5%	20.0%	30.0%	40.0%	2.5%
b	Lack of accuracy. The standard costing method of charging labour and overheads has been criticised and it is argued that it will lead to inaccuracies.	7.5%	30.0%	20.0%	35.0%	7.5%
c	Lack of relevance. A changing production environment may result in a lack of relevance for standard costing variances when assessing manufacturing performance.	2.5%	35.0%	20.0%	35.0%	7.5%
d	Timeliness. Variance reports can take a long time to process, which can significantly reduce the value of the standard costing information.	10.0%	42.5%	12.5%	27.5%	7.5%

Analyses of responses indicate that statements regarding focus, accuracy and relevance scored an agreement rate of 43% each and disagreement rate of at least 28% indicating that respondents marginally consider these as limitations of standard costing. However, respondents do not consider timeliness as a limitation of standard costing as responses relating to timeliness indicated a disagreement rate of 53%.

**Q2.7. In your opinion are there any other limitations of standard costing?**

Respondents were requested to indicate whether there are any other limitations of standard costing, not listed in Table 5.2. Below is a summary of the responses:

- standards used have to be kept up to date to ensure standard costing can be an effective measurement tool
- standard costing does not timeously account for external factors like exchange rate
- standard costing does not supply information for Automotive Production Development Plan(APDP) rebate claims
- reporting of actuals and standards at month end can cause large variances when substitute materials are used in the process

### **5.3.2 Sub-Objective 1: To investigate the relevance of standard costing in modern manufacturing organisations in the Eastern Cape.**

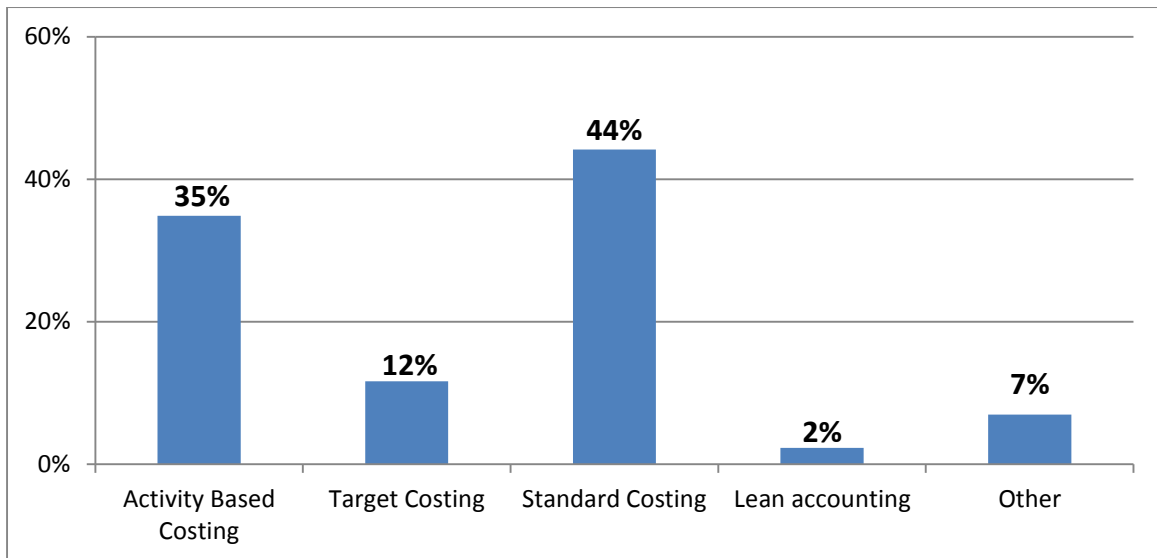
The purpose of this sub-objective is to investigate if standard costing is used in modern manufacturing organisations. The following questions were included in the questionnaire to address this objective:

- Q2.1 Which accounting approach does your company use?
- Q2.2. Does your company make use of more than one accounting approach?
- Q2.3. If you answered yes in 2.2, please indicate the reason for using more than one accounting approach.

The responses to these questions are discussed below.

#### **Q2.1 Which accounting approach does your company use?**

Figure 5.5 shows the distribution of accounting approaches in manufacturing organisations in the Eastern Cape. 44% of respondents indicated that their manufacturing organisation make use of standard costing. ABC is used by 35% of respondents' manufacturing organisation whilst the remaining 21% indicated their organisation make use of another costing approach.



**Figure 5.5 Accounting approaches**

**Q2.2 Does your company make use of more than one accounting approach?**

As indicated in Q2.1 not all Eastern Cape manufacturing organisations make use of standard costing. The question was posed to respondents if their manufacturing organisations solely use one accounting approach or more than one accounting approach. 10% of (4) respondents indicated that their Eastern Cape manufacturing organisation used standard costing in conjunction with other costing approaches.

**Q2.3. If you answered yes in 2.2, please indicate the reason for using more than one accounting approach.**

As follow up question to Q2.2, respondents were asked to indicate the reason for using more than one accounting approach. All (4) respondents indicated the reason their manufacturing organisation used more than one accounting approach was to cost overheads more accurately.

**5.3.3 Sub-Objective 2: To contrast the benefits and drawbacks of modern alternatives.**

The purpose of this sub-objective is to contrast the benefits and drawbacks of modern alternatives. The following questions were included in the questionnaire to address this objective:

- Q2.13 The following benefits of lean costing have been identified.



- Q2.14 In your opinion are there any other benefits of lean costing?
- Q2.15 The following factors are considered to be limitations of lean costing.
- Q2.16 In your opinion are there any other limitations or difficulties to use lean costing?
- Q2.17 The following benefits of activity based costing have been identified.
- Q2.18 In your opinion are there any other benefits of activity based costing?
- Q2.19 The following factors are considered to be limitations of activity based costing.
- Q2.20 In your opinion are there any other limitations or difficulties to use activity based costing?
- Q2.21 The following benefits of target costing has been identified.
- Q2.22 In your opinion are there any other benefits of target costing?
- Q2.23 The following factors are considered to be limitations of target costing.
- Q2.24 In your opinion are there any other limitations or difficulties to use target costing?

**Q2.13. Indicate level of agreement on benefits of lean costing.**

Respondents were asked to indicate their level of agreement with benefits of lean costing. Table 5.3 reflects the responses to question Q2.13.

**Table 5.3: Summary of responses (expressed in %) relating to benefits of lean costing**

		Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
a	Lead time reduction	5.0%	15.0%	40.0%	35.0%	5.0%
b	Increased productivity	5.0%	10.0%	52.5%	27.5%	5.0%
c	Work-in-process inventory reduction	5.0%	22.5%	15.0%	37.5%	20.0%

d	Improved quality	7.5%	22.5%	22.5%	40.0%	7.5%
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Analyses of responses indicate that lead time reduction and increased productivity are considered neutral. These two statements achieved a minimum of 33% agreement rate, but also a high neutral rate of at least 40%. Responses indicate that work-in-process inventory reduction and quality improvement are considered benefits of lean costing with an agreement rate of at least 48%. The researcher believes this mirrors the response to Q2.1 regarding use lean accounting by manufacturing organisations in the Eastern Cape.

**Q2.14. In your opinion are there any other benefits of lean costing?**

Respondents were requested to indicate whether there are any other benefits of lean costing, not listed in Table 5.3. There were no responses to this question. The researcher believes that respondents are not familiar with lean costing.

**Q2.15. Indicate level of agreement on limitations of lean costing**

Respondents were asked to indicate their level of agreement with limitations of lean costing. Table 5.4 reflects the responses for question Q2.14.

**Table 5.4: Summary of responses (expressed in %) relating to limitations of lean costing**

		Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
a	Insufficient understanding of the potential benefits	0.0%	10.0%	27.5%	30.0%	32.5%
b	Insufficient skills by management, supervision and staff to implement lean	7.5%	15.0%	32.5%	30.0%	15.0%

c	The cost of the investment	0.0%	5.0%	55.0%	30.0%	10.0%
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Respondents indicated their agreement to limitations of lean costing regarding the statements of insufficient understanding of the potential benefits and insufficient skills by management, supervision and staff to implement lean. These statements scored an agreement rate of at least 45%. However, respondents consider the cost of investment as neutral with a rate of 55%.

#### **Q2.16. In your opinion are there any other limitations of lean costing?**

Respondents were requested to indicate whether there are any other limitations of lean costing, not listed in Table 5.4. Below is a summary of the responses:

- lean costing will require buy-in from all stakeholders in the supply chain
- a mind-set embracing change within the organisation will be required

#### **Q2.17. Indicate level of agreement on benefits of activity based costing.**

Table 5.5 reflects the responses to question Q2.17 where respondents were asked to indicate their level of agreement to benefits of activity based costing.

**Table 5.5: Summary of responses (expressed in %) relating to benefits of activity based costing**

		Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
a	Minimises distortions on product costs that might occur from arbitrary allocation of overhead costs.	3%	20%	20%	33%	25%
b	Facilitating elimination of waste by providing visibility of non-value added activities.	8%	23%	10%	30%	30%
c	Provides a more accurate method of costing of products and services.	8%	23%	28%	30%	13%
d	Improved profitability by monitoring total lifecycle cost and performance.	13%	25%	23%	35%	5%

Analyses of responses indicate that all statements are considered benefits of activity based costing in manufacturing organisations in the Eastern Cape with a minimum of 38% agreement rate. The statement regarding improved profitability is marginally regarded as a benefit of activity based costing as it scored a 40% agreement rate but also a 38% disagreement rate.

**Q2.18. In your opinion are there any other benefits of activity based costing?**

Respondents were requested to indicate whether there are any other benefits of activity based costing, not listed in Table 5.5. Below is a summary of the responses:

- provides a better understanding of overheads
- supports continuous improvement

**Q2.19. Indicate level of agreement on limitations of activity based costing.**

Table 5.6 reflects the responses for question Q2.19 where respondents were asked to indicate their level of agreement with limitations of activity based costing.

**Table 5.6: Summary of responses (expressed in %) relating to limitations of activity based costing**

		Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
a	Spending too much time, effort, and even money on gathering and analysing data.	8%	10%	13%	40%	30%
b	Lack of detail records can lead to insufficient data.	5%	10%	13%	43%	30%
c	Accounting system needs to be revamped keep up ABC	5%	10%	33%	20%	33%
d	Requires a level of exactness that is both difficult to attain and time consuming.	0%	8%	13%	38%	43%

Analyses of responses indicate the agreement with all the statements as limitations of activity based costing. All the statements scored an agreement rate of at least 70% with the exception of the statement regarding the accounting system that need to be revamped, which scored an agreement rate of 53%.

**Q2.20. In your opinion are there any other limitations of activity based costing?**

Respondents were requested to indicate whether there are any other limitations of activity based costing, not listed in Table 5.6. Below is a summary of the responses:

- costly to implement
- difficult to assign to products

**Q2.21. Indicate level of agreement on benefits of target costing.**

Table 5.7 reflects the responses to question Q2.21 where respondents were asked to indicate their level of agreement to benefits of target costing.

**Table 5.7: Summary of responses (expressed in %) relating to benefits of target costing**

		Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
a	Launch products that improve on previous generations by having reduced prices or improved quality and functionality	10%	25%	30%	28%	8%
b	Involves staff from all areas in the cost analysis, which encourages responsibility for managing costs.	0%	15%	15%	35%	35%
c	Can be more effective when used within the supply chain, as it increases the possibilities for design changes.	8%	15%	10%	38%	30%

Responses indicate that all statements are considered benefits of target costing. However, the statement regarding the improvement of launch products is only marginally considered as a benefit of target costing as it only scored an agreement rate of 36% and disagreement rate of 35%. The other statements scored agreements rates of at least 68%.

**Q2.22. In your opinion are there any other benefits of target costing?**

Respondents were requested to indicate whether there are any other benefits of target costing, not listed in Table 5.7. The responses indicated the following:

- to plan or project the costs of future products before they are introduced
- to ensure products which generate insufficient returns are not introduced

**Q2.23. Indicate level of agreement on limitations of target costing.**

Table 5.8 reflects the responses for question Q2.23 where respondents were asked to indicate their level of agreement with limitations of target costing.

**Table 5.8: Summary of responses (expressed in %) relating to limitations of target costing**

		Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
a	Longer development times – an overemphasis on design results in a longer product development cycle and a longer time to market.	0%	15%	20%	33%	33%
b	Employee burnout – pressure to attain demanding targets can result in employee burnout.	0%	0%	5%	40%	55%
c	Target costing is too time consuming	10%	13%	30%	38%	10%

d	Target costing focuses attention on cost drivers and away from revenue drivers.	5%	18%	23%	28%	28%
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Responses indicate their agreement with all the statements as limitations of target costing. All the statements scored an agreement rate of at least 48%. Responses showed a strong agreement to the statement about employee burnout with an agreement rate of 95%.

**Q2.24. In your opinion are there any other limitations of target costing?**

Respondents were requested to indicate whether there are any other limitations of activity based costing, not listed in Table 5.8. Below is a summary of the responses:

- target costing can be too detailed

**5.3.4 Sub-Objective 3: To investigate the factors influencing the accuracy of standard costs**

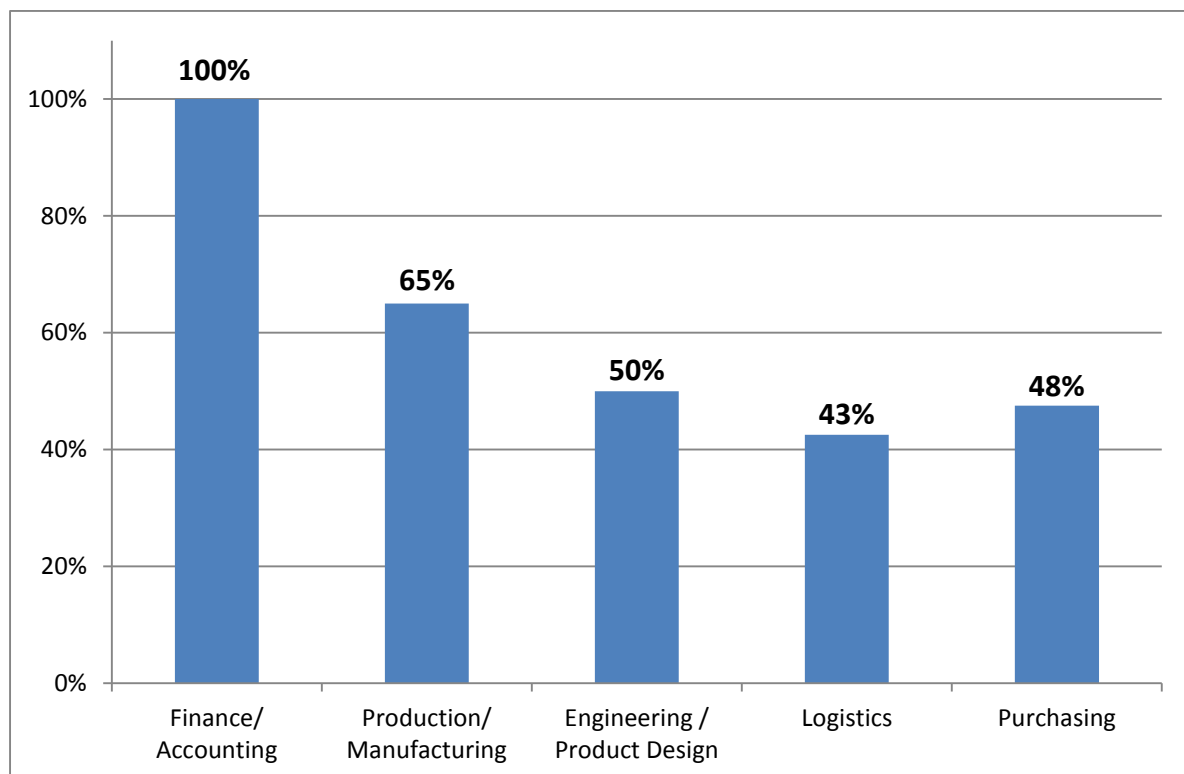
The purpose of this sub-objective is to investigate the factors influencing the accuracy of standard costs. As mentioned in Chapter 2, standard cost variances provide feedback information between the planned cost of a period and the actual cost incurred for that same period. Cost variances comprise of several different elements that together make up the total reported variance. Managers can use variance information to trigger corrective action. In order to gain insight regarding the factors influencing the accuracy of standard costs in manufacturing organisations, the following questions were included in the questionnaire to address this objective:

- Q2.8 Which areas/departments in your company are actively involved in setting standards?
- Q2.9 Are there any other areas/departments in your company involved in setting standards?
- Q2.10 How often does your company evaluate standards?
- Q2.11 The following are factors that affect the accuracy of setting direct material, labour and overhead standards.

- Q2.12 In your opinion are there any other factors (not listed above) that affect the accuracy of standards?

**Q2.8. Which areas/departments in your company are actively involved in setting standards?**

In order to determine which departments are involved in setting standards, respondents were requested to indicate which departments in their manufacturing organisations are involved in setting standards. Figure 5.6 shows the departments that are involved in settings standards.



**Figure 5.6 Distribution of departments involved in setting standards**

All respondents indicated that finance/accounting is actively involved with setting standards. 65% of respondents indicated that production/manufacturing is involved with setting standards, whilst engineering/product design (50%), purchasing (48%) and logistics (43%) show the least involvement in setting standards.

**Q2.9. Are there any other areas/departments in your company involved in setting standards?**



A follow up question was posed to the respondents to ascertain if there are any other departments not listed in question Q2.8, that are involved in setting standards in their manufacturing organisations.

Respondents indicated that the following departments in addition to those listed in question Q2.8 are also involved in setting standards in their manufacturing organisations:

- sales and marketing
- quality

### Q2.10. How often does your company evaluate standards?

The literature review in Chapter 2 stated that standards have to be updated to be considered as an effective measurement tool. To gain further insight into how often standards are updated, respondents were requested to indicate how often standards are updated in their manufacturing organisation. Figure 5.7 shows how often standards are updated.

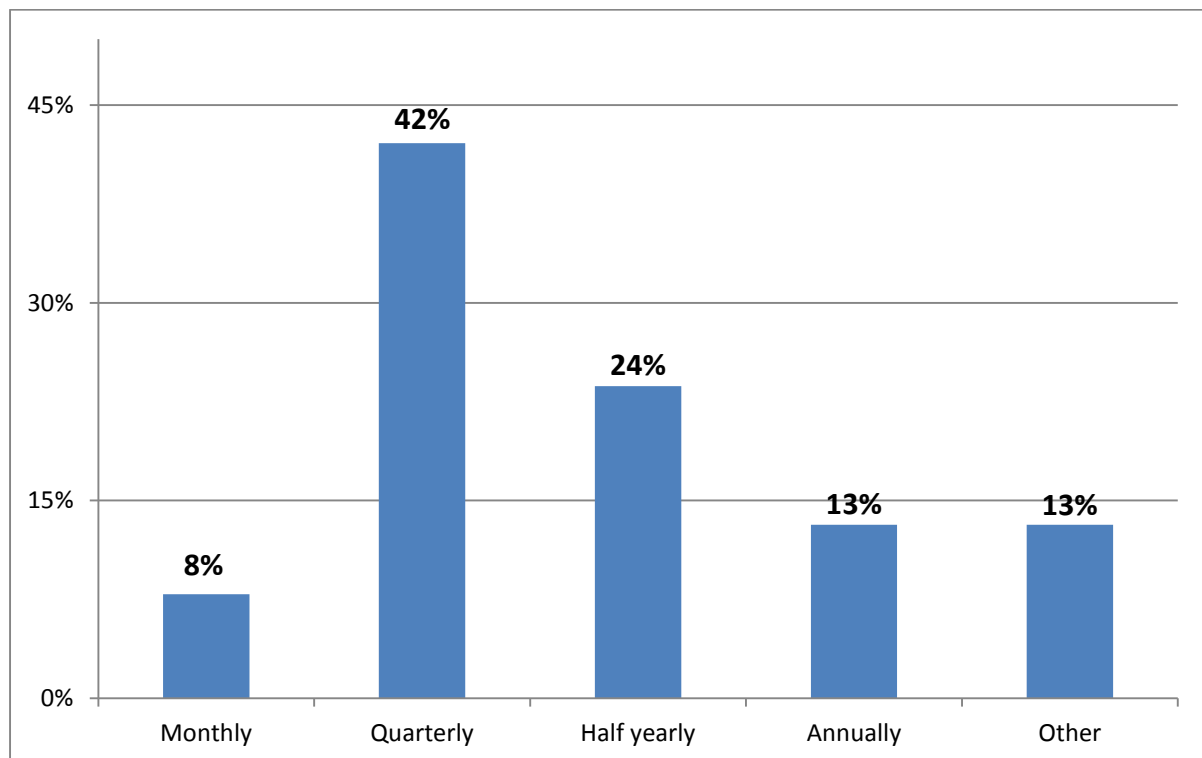


Figure 5.7 Distribution of how often standards are updated

Almost half of respondents indicated that standards are updated quarterly (42%) at their manufacturing organisation. 24% of respondents indicated that standards are updated half yearly and 8% of respondents indicated a monthly update. 13% each of respondents indicated either an annual or longer than a year update of standards. This would suggest that respondents feel that manufacturing organisations want to stay abreast of changes in their internal and external environment and consider a yearly update of standards inappropriate to keep track of these changes.

**Q2.11. Indicate level of agreement on statements relating to factors that affect the accuracy of setting direct material, labour and overhead standards**

Respondents were asked to indicate their level of agreement with factors that affect the accuracy of setting direct material, labour and overhead standards. Table 5.9 reflects the responses for question Q2.11.

**Table 5.9: Summary of responses (expressed in %) regarding factors that affect the accuracy of setting direct material, labour and overhead standards**

		Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
a	Product specifications derived from an intensive study of input quantity necessary for each operation.	3%	10%	18%	49%	21%
b	Standard prices based on the assumption that the selected suppliers can provide the required quantity and sound quality materials at the most competitive price.	5%	8%	21%	44%	23%
c	Elimination of any unnecessary elements and the determination of the most efficient production method.	5%	0%	18%	62%	15%

Analyses of the responses indicate that respondents agree with all the statements. All items scored a high agreement rate with of at least 67%. This would suggest that

respondents feel that all factors affect the accuracy of setting direct material, labour and overhead standards.

**Q2.12. In your opinion, are there any other factors that affect the accuracy of standards?**

An additional question to question Q2.11 was posed to the respondents to ascertain if there are any other factors not listed in question Q2.11, that affect the accuracy of setting direct material, labour and overhead standards.

Respondents indicated that the following additional factors also affect the accuracy of setting standards in their manufacturing organisations:

- import rebates
- exchange rates
- fixed overhead structure
- commodity prices
- good documentation for the assumptions of setting standards
- trend analysis
- reliable data

This would suggest that respondents feel that there are quite a few factors that affect the accuracy of setting standards. The researcher believes this might be a reason why the majority of respondents, as indicated earlier, update standards bi-annually or sooner.

## **5.4 CONCLUSION**

This chapter presented an overview of the biographical details of the respondents and the empirical findings of the study. The results were presented in descriptive terms, graphic and tabular forms. The main conclusions to emerge from this chapter are as follows:

- the questionnaires were completed by experienced practitioners. The majority of respondents (50%) have between 10 and 20 years business experience

whilst another 20% of respondents have between 20 and 30 years business experience

- all respondents have achieved a tertiary qualification
- respondents indicated that performance management, cost control, budget and planning and generating information for decision making are considered benefits of standard costing
- respondents (42%) do not regard timeliness as a limitation of standard costing
- the majority of respondents (44%) indicated that their organisation make use of standard costing
- only 2% of manufacturing organisations in the Eastern Cape make use of lean accounting
- the majority of respondents (63%) indicated that the insufficient understanding of potential benefit is a limitation of lean costing
- 81% of respondents consider the level of exactness which, is difficult to attain and time consuming, in activity based costing as a limitation
- the majority of respondents (95%) indicated that employee burnout is a limitation of target costing
- all respondents indicated that finance/accounting are actively involved in setting standards in their manufacturing organisation
- the majority of respondents (70%) indicated that product specifications derived from an intensive study for each operation affect the accuracy of standards
- the majority of respondents (77%) indicated that the elimination of any unnecessary elements and the determination of the most efficient production method affect the accuracy of standards
- 74% of respondents indicated that standards are updated half yearly or sooner

**CHAPTER 6**  
**SUMMARY AND CONCLUSIONS**

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## **CHAPTER 6**

### **SUMMARY AND CONCLUSIONS**

#### **6.1 INTRODUCTION**

In today's competitive market, organisations have to adapt and react quickly to changes in macro-economic factors in the economic environment. Standard costing is generally best suited to organisations with repetitive activities. The underlying principles of standard costing are that a standard set before a period is a satisfactory measure throughout the period and that the performance is acceptable if it meets this standard.

Modern business trends such as continual improvement and responding to individual customer needs have emerged. JIT organisations are adopting a climate of continuous improvement and the idea of normal levels of wastage and efficiency is becoming unacceptable because of the drive to zero wastage and increasing efficiency.

As mentioned in Chapter 1, some researchers are of the view that standard costs are obsolete and not relevant in modern manufacturing organisations. They argue that the underlying principles of standard costing are at odds with modern business trends. The main purpose of this research is to assess the rationale of using standard costing in manufacturing organisations in the Eastern Cape when modern alternatives are available. In support of the main research purpose, the study focused on achieving the following sub-objectives:

- to investigate the relevance of standard costing in modern manufacturing organisations
- to contrast the benefits and drawbacks of modern alternatives
- to investigate the factors that influences the accuracy of standard costs

The achievement of the study objectives were completed by performing an in-depth study on standard costing as presented in the literature in Chapter 2 and modern alternatives in Chapter 3. The empirical survey consisted of self-administered questionnaires sent to Eastern Cape vehicle manufacturing companies and its major component suppliers. The significant empirical findings that emerged from this study and areas for future research will be discussed in the rest of the chapter.

## **6.2 SIGNIFICANT FINDINGS IN RESPECT OF RESEARCH OBJECTIVES**

The findings of the empirical surveys and the interpretation thereof cannot supply answers on all aspects relating to standard costing. However, it is the belief that the findings of this study do provide valuable insight and understanding regarding the rationale of using standard costing in manufacturing organisations in the Eastern Cape when modern alternatives are available.

### **6.2.1 Findings: Primary Research Objective**

Respondents regard the following items as the main benefits when using standard costing:

- performance management
- cost control
- budget and planning
- generating information for decision making

Respondents do marginally regard focus, accuracy and relevance as limitations of standard costing. Timeliness is not considered a limitation of standard costing. From the research conducted, the findings conclude that manufacturing organisations in the sample have considered the benefits and limitations of standard costing.

### **6.2.2 Findings: Research Objective 1**

The majority (44%) of respondents indicated that their manufacturing organisation use standard costing. Activity based costing is used by 35% of respondents' manufacturing organisations whilst the remaining respondents indicated their organisation make use of another costing approach. 10% of respondents indicated their organisation used

standard costing in conjunction with activity based costing to cost overheads more accurately.

The use of standard costing and the consideration of the benefits and the limitations of standard costing, as mentioned in the findings of the primary research, indicate the relevance of standard costing in Eastern Cape manufacturing organisations.

### **6.2.3 Findings: Research Objective 2**

Respondents regard improved quality as a benefit and insufficient understanding of potential benefits as a limitation of lean costing. However, based on the high neutral rate presented in Table 5.3 and Table 5.4, respondents are unfamiliar with lean costing.

The majority of respondents agreed with the potential benefits relating to activity based costing listed in Table 5.5. Respondents provided an additional list of potential benefits. These are listed below:

- provides a better understanding of overheads
- supports continuous improvement

The majority of respondents agreed with the potential limitations relating to activity based costing listed in Table 5.6. 81% of respondents agreed to the statement that activity based costing requires a level of exactness that is both difficult to attain and is time consuming. Respondents added that difficulty to assign products and costly to implement are further limitations of activity based costing.

The majority of respondents agreed with the potential benefits relating to target costing listed in Table 5.7. Respondents indicated the following additional target costing benefits:

- to plan or project the costs of future products before they are introduced
- to ensure products which generate insufficient returns are not introduced

Respondents indicated their agreement to the limitation stating target costing focuses attention on cost drivers and away from revenue drivers. This statement scored a strong agreement rate of 95%. Respondents added that a further limitation to target costing is that it can be too detailed.



### **6.2.4 Findings: Research Objective 3**

The finance/accounting department is actively involved in setting standards at all manufacturing organisations in the sample. The majority (74%) of respondents indicated that standards are updated in one to six months as seen in Figure 5.7. Respondents agreed with the list of factors regarded as affecting the accuracy of setting standards. These factors are as follows:

- product specifications derived from an intensive study of input quantity necessary for each operation
- standard prices based on the assumption that the selected suppliers can provide the required quantity and sound quality materials at the most competitive price
- elimination of any unnecessary elements and the determination of the most efficient production method

Furthermore, respondents provided an additional list of factors they regard as affecting the accuracy of setting standards. These factors are as follows:

- import rebates
- exchange rates
- fixed Overhead structure
- commodity prices
- good documentation for the assumptions of setting standards
- trend analysis
- reliable data

### **6.3 AREAS FOR FUTURE RESEARCH**

As stated in Chapter 1, this study is delimited to Eastern Cape vehicle manufacturing companies and its major component suppliers. The research findings contributed to

the use of accounting approaches in manufacturing organisations. It also highlighted the perceived importance of ensuring standards are not outdated. Thus ensuring manufacturing organisations stay abreast of changes in their internal and external environment.

Based on the current research objectives, future research may include:

An empirical survey on a national basis can be performed. This will increase the sample size. This sample size increase will highlight the significance of the current research objectives and a comparison between the regional and national surveys can be done for possible differences that may exist.

Secondly, research can be undertaken at original equipment manufacturers (OEM) and its suppliers. This can be undertaken at both regional and national level. A comparison between the OEM and supplier at national and regional level, based on number of employees and/or annual turnover can be done to determine the possible differences and similarities that may exist.

Furthermore, research can be undertaken with regards to the use of modern accounting approaches in conjunction with each other. This could highlight possible differences and similarities of modern accounting approaches. The barriers to adoption and how these barriers can be overcome can be investigated.

Lastly, research can be undertaken in service industries. Although the literature indicate that standard costing is generally best suited to organisations with repetitive activities, this research will enable a comparison to be made between manufacturing and services industries.

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## **Annexure A**

Date 24 July 2015

Dear Sir/ Madam

### THE RATIONALE OF USING STANDARD COSTING WHEN MODERN ALTERNATIVES ARE AVAILABLE IN YOUR COMPANY

#### **1. Purpose of the study**

The purpose of the project is to investigate the rationale of using standard costing in manufacturing organisations in the Eastern Cape when modern alternatives are available.

#### **2. Background**

In today's competitive market, organisations have to adapt and react quickly to changes in macro-economic factors in the economic environment. Standard costing is generally best suited to organisations with repetitive activities. The underlying principles of standard costing are that a standard set before a period is a satisfactory measure throughout the period and that the performance is acceptable if it meets this standard.

Modern business trends such as continual improvement and responding to individual customer needs have emerged. JIT organisations are adopting a climate of continuous improvement and the idea of normal levels of wastage and efficiency is becoming unacceptable because of the drive to zero wastage and increasing efficiency.

Some researchers are of the view that standard costs are obsolete and not relevant in modern manufacturing organisations. They argue that the underlying principles of standard costing are at odds with modern business trends such as continual improvement and responding to individual customer needs. The purpose of this research is to investigate the rationale of using standard costing in manufacturing organisations in the Eastern Cape when modern alternatives are available.

### **3. Your involvement**

I would appreciate it, if you could complete the enclosed questionnaire. It has been prepared in such a way that it will require not more than 30 minutes to complete. If it would be more convenient, I would be happy to record your responses in a telephonic discussion.

Your completion of this questionnaire is critical to my study and will determine the success of this research project.

### **4. Confidentiality**

All information will be treated as confidential and it will be impossible to identify any individual or specific company on the basis of the results included in the final report. I would be prepared to sign a confidentiality agreement if this is required.

### **5. Return date**

Please return the completed questionnaire before 14 August 2015. If you need to contact me, my details appear below.

Yours faithfully

**XAVIER JANUARIE**

Tel no: (041) 994 5165

Cell no: 072 868 0694

E-mail: [januari@vwsa.co.za](mailto:januari@vwsa.co.za)

***STRICTLY CONFIDENTIAL QUESTIONNAIRE***

*Survey on the rationale of using standard costing in manufacturing organisations in the Eastern Cape when modern alternatives are available.*

*Research Leader: Xavier Januarie*

## **SECTION A**

### **BIOGRAPHIC DETAILS**

1.1 What is your current age in years? (Mark with X)

Between 20 and 30 years	
Between 30 and 40 years	
Between 40 and 50 years	
Older than 50 years	

1.2 What is your job title?

Financial Director	
Treasurer	
Financial Manager	
Management Accountant	
Finance Controller	

Inventory Accountant	
Cost Accountant	
Other	

If other, please specify .....

1.3 How many years of business experience do you have, specifically in the finance function?

0 and 1 year	
Between 2 and 5 years	
Between 6 and 10 years	
Between 10 and 20 years	
Between 20 and 30 years	
Between 30 and 40 years	
More than 40 years	

If more than 40 years, please specify .....

1.4 What is the highest diploma/ degree/ professional qualification that you have obtained?

National Diploma	
Bachelor's Degree	
Master's Degree	
Doctoral Degree	
Other	

If other, please specify .....

## **SECTION B**

### **INFORMATION ON STANDARD COSTING AND OTHER MODERN ALTERNATIVES**

2.1. Which accounting approach does your company use?

Activity Based Costing	
Target Costing	
Standard Costing	
Lean organisation	
Other	

If other, please specify .....

2.2. Does your company make use of more than one accounting approach?

.....  
 .....

2.3. If you answered yes in 2. 2, please indicate the reason for using more than one accounting approach

.....  
 .....

2.4 Please indicate your level of agreement or disagreement to the statements:

		Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
a	Performance management					
b	Cost control					
c	Budget and planning					
d	Generating information for decision making					

2.5 In your opinion are there any other benefits of standard costing?

.....  
 .....



2.6 The following factors are considered to be limitations of standard costing. Please indicate your level of agreement or disagreement to the statements:

		Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
a	Lack of focus. Standard costing system gives relatively little attention to the external environment.					
b	Lack of accuracy. The standard costing method of charging labour and overheads has been criticised and it is argued that it will lead to inaccuracies.					
c	Lack of relevance. A changing production environment may result in a lack of relevance for standard costing variances when assessing manufacturing performance.					
d	Timeliness. Variance reports can take a long time to process, which can significantly reduce the value of the standard costing information.					

2.7 In your opinion are there any other limitations or difficulties to use standard costing?

.....  
 .....

2.8. Which areas/departments in your company are actively involved in setting standards?

		Yes	No
a	Finance/ Accounting		
b	Production/ Manufacturing		
c	Engineering / Product Design		
d	Logistics		
e	Purchasing		

2.9 Are there any other areas/departments in your company involved in setting standards?

.....

.....

2.10 How often does your company evaluate standards?

Monthly	
Quarterly	
Half yearly	
Annually	
Other, please specify	.....

2.11 The following factors that affect the accuracy of setting direct material, labour and overhead standards:

		Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
a	Product specifications derived from an intensive study of input quantity necessary for each operation.					
b	Standard prices based on the assumption that the selected suppliers can provide the required quantity and sound quality materials at the most competitive price.					
c	Elimination of any unnecessary elements and the determination of the most efficient production method.					

2.12 In your opinion are there any other factors (not listed above) that affect the accuracy of standards?

.....

.....

The following statements relate to modern alternatives.

2.13 The following benefits of Lean costing have been identified. Please indicate your level of agreement or disagreement to the statements:

		Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
a	Lead time reduction					
b	Increased productivity					
c	Work-in-process inventory reduction					
d	Improved quality					

2.14 In your opinion are there any other benefits of Lean costing?

.....

.....

2.15 The following factors are considered to be limitations of Lean costing. Please indicate your level of agreement or disagreement to the statements:

		Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
a	Insufficient understanding of the potential benefits.					
b	Insufficient skills by management, supervision and staff to implement Lean.					
c	The cost of the investment.					

2.16 In your opinion are there any other limitations or difficulties to use Lean costing?

.....

.....

2.17 The following benefits of Activity based costing have been identified. Please indicate your level of agreement or disagreement to the statements:

		Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
a	Minimises distortions on product costs that might occur from arbitrary allocation of overhead costs.					
b	Facilitating elimination of waste by providing visibility of non-value added activities.					
c	Provides a more accurate method of costing of products and services.					
d	Improved profitability by monitoring total lifecycle cost and performance.					

2.18 In your opinion are there any other benefits of Activity based costing?

.....

.....

2.19 The following factors are considered to be limitations of Activity based costing. Please indicate your level of agreement or disagreement to the statements:

		Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
a	Spending too much time, effort, and even money on gathering and analysing data.					
b	Lack of detail records can lead to insufficient data.					

c	Accounting system needs to be revamped keep up ABC					
d	Requires a level of exactness that is both difficult to attain and time consuming.					

2.20 In your opinion are there any other limitations or difficulties to use Activity based costing?

.....

.....

2.21 The following benefits of Target costing have been identified. Please indicate your level of agreement or disagreement to the statements:

		Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
a	Launch products that improve on previous generations by having reduced prices or improved quality and functionality					
b	Involves staff from all areas in the cost analysis, which encourages responsibility for managing costs.					
c	Can be more effective when used within the supply chain, as it increases the possibilities for design changes.					

2.22 In your opinion are there any other benefits of Target costing?

.....

.....

2.23 The following factors are considered to be limitations of Target costing. Please indicate your level of agreement or disagreement to the statements:

		Strongly disagree	Disagree	Neutral	Agree	Strongly Agree
a	Longer development times – an overemphasis on design results in a longer product development cycle and a longer time to market.					
b	Employee burnout – pressure to attain demanding targets can result in employee burnout.					
c	Target costing is too time consuming					
d	Target costing focuses attention on cost drivers and away from revenue drivers.					

2.24 In your opinion are there any other limitations or difficulties to use Target costing?

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**Thank you for your valuable time and input**