

EVALUATING THE IMPLEMENTATION OF ACTIVITY-BASED COSTING AT
THE GOVERNMENT INSTITUTIONS PENSION FUND IN NAMIBIA

A RESEARCH PAPER SUBMITTED IN PARTIAL FULFILMENT
OF
THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF SCIENCE IN ACCOUNTING AND FINANCE

OF
THE UNIVERSITY OF NAMIBIA

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APRIL 2018

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Abstract

This thesis explores the adoption and implementation of ABC in 2009 by the Government Institutions Pension Fund in Namibia. The purpose of this study is to evaluate whether the implementation of ABC at the GIPF was effective. The aim of this study is to determine the benefits achieved as well as the barriers and challenges that might have been encountered thus far in the implementation of ABC at the GIPF. This study is an empirical investigation, which analyses the experiences and perception of ABC in the pension fund industry. The population of the study is one hundred and ninety-seven GIPF employees. The study used a sample of thirty-eight staff members. The primary data for the study was collected using a questionnaire. Tables, frequencies, percentages and narratives were used for the presentation of findings. Twenty-seven questionnaires were returned, thereby achieving a 71% return rate. The study found that resistance to change, time-consuming cost driver identification, the high cost of consultants, focusing priorities on other projects and the volume of work required to implement ABC were barriers to effective implementation. The study found that the implementation of ABC led to cost reduction, quality decision-making and improvement in management reporting. GIPF employees were of the view that the adoption of ABC was properly implemented. The study recommended that the adoption of the ABC system should involve all departments, management commitment and a continuous review of post-implementation reports, provision of training, involvement of employee representatives and measurement of improvements achieved. The study recommended that further studies be undertaken using larger samples and different research designs and methodologies including sectorial and comparative studies.

Acknowledgments

I hereby wish to express my appreciation and gratitude to all the people and institutions who rendered help to me in the course of this study:

- Firstly, I would like to thank my God through my Lord Jesus Christ who created me in His own image. His endless love and Holy Spirit guided me. Thank you Lord, I love you very much.
- A sincere gratitude to my supervisor, Professor Merwe Oberholzer, who has been very supportive with my thesis. Thank you very much for your advice and patience in reading, correcting and commenting on the drafts of my thesis. I am very grateful for your tireless motivation to enable me to complete this study.
- To my lovely wife inaNgatangwe (Charene Mokka), you have been a pillar of strength for me. I thank you very much for your unconditional love and the understanding and support you rendered to me every step of the way. I am truly thankful for having you in my life. I love you very much and may God bless you.
- To my beautiful children, thank you for your love and understanding when I did not have time to spend with you during my research. I love you very much and God bless you.
- To my entire GIPF family, thank you very much for your financial support and also for taking valuable time out to complete the questionnaires.
- I also wish to express my thanks to the University of Namibia and GIPF for giving me the opportunity to study further in my career. My appreciation goes to the UNAM staff for their positive support during my studies, especially Prof Paliwal for encouraging me.

Dedication

This thesis is dedicated to God Almighty, the Heavenly Father, my creator, my strong pillar and my source of inspiration and wisdom. I also dedicate this thesis to my uncle, Gerson Karunga, who encouraged me throughout my studies and whose encouragement enabled me to finish that which I started. I thank you and love you very much, Uncle. May God bless you abundantly.

Declarations

I, Marcello Kautora Hitiraukunga, hereby declare that this study is my own work and is a true reflection of my research, and that this work, or any part thereof, has not been submitted for a degree at any other institution.

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Acronyms

ABC	Activity-Based Costing
CPS	Crown Protection Services
GIPIF	Government Institutions Pension Fund
OULS	Oxford University Library Services
TDABC	Time-Driven Activity-Based Costing
UNAM	University of Namibia

CHAPTER ONE

INTRODUCTION AND BACKGROUND

1. Introduction

1.1 Orientation of the study

The Government Institutions Pension Fund (GIPF) is a self-administered defined benefit pension scheme that is registered in terms of the Pension Fund Act (24 of 1956) to provide retirement, death and ancillary benefits to government employees and employees of other government institutions and state-owned enterprises who would have participated in the scheme (GIPF Annual Report, 2013). This means that the fund and administration aspects are in one basket pool and there is no separation between the two. This setup has made it cumbersome to provide proper costing of the administrative services and to benchmark the administrative cost with the industry. Therefore, the main theme of this study is Activity-Based Costing (ABC), a costing approach that assigns resource costs to cost objects such as products, services or customers, based on the activities performed for the cost objects (Thyssen, Israelsen, & Jorgensen, 2006).

According to one of the GIPF objectives set in the 2007-2012 Strategic Plan, it is to reduce the cost to serve of the members and to achieve a cost-efficient administration. The reduction of cost to serve can only be realised once there are proper costing mechanisms in place to enable business process improvement. On the basis of the above background, it has become essential to identify all fund and non-fund related (administration) services in order to develop a costing model for the GIPF. Since 2009, the GIPF adopted ABC together with Activity-Based Budgeting

(ABB) and implemented these principles as the costing and budgeting systems (note that the study mainly focuses on ABC, because ABB is only an extension thereof).

It is generally argued that the primary reason for the adoption and implementation of ABC is its ability to provide more accurate cost information for companies operating in today's globally competitive market (Needy, Nachtmann, Roztock, & Warner, 2003). Due to the pressures of the competitive environment, companies should ensure that pricing structures are efficient and effective. ABC addresses the pricing distortions which exist in traditional costing systems (Raz & Elnathan, 1999) and managers are provided with a holistic view of cost management.

The review of literature and current research seems to indicate that companies often neglect cost accounting methods and often use methods that are no longer relevant to the changing manufacturing environment. Although the literature agrees that ABC is superior to traditional costing, many authors identified and reported issues, both favourable and unfavourable, with regard to ABC (Sartorius, Eitzen, & Kamala, 2007; Fortin, Haffaf, & Viger, 2007; Rundora, Ziemerink, & Oberholzer, 2013). Furthermore, it is also important to focus on the second-generation ABC systems advocated by Kaplan and Anderson (2007; 2004), which are known as "time-driven activity-based costing" (Mortaji, Bagherpour, & Mazdeh, 2013).

The problem identified is that since ABC (and ABB) was implemented at the GIPF, it was never critically evaluated to analyse the effectiveness of the implementation and to determine the extent that some of the benefits and barriers identified in the literature are experienced. Furthermore, it is also important to investigate whether

(and to what extent) ABC could be upgraded and effectively implemented to meet the requirements of a second-generation system.

The practical problem identified and the gap in the literature review is that, firstly, there was no post-review to evaluate the degree of success of ABC implementation at the GIPF, and secondly, there is a dearth of studies where ABC (and ABB) was designed for the specific needs for pension funds. Furthermore, there were only a few Southern African-based studies on ABC, for example, Rundora *et al.* (2013) who investigated ABC in small manufacturing firms: in South Africa, Stouthuysen, Schierhout, Roodhooft and Reusen (2014) analysed the time-driven ABC for public services; Sartorius *et al.* (2007) who developed the design and implementation of the ABC system in South Africa; Mortaji *et al.* (2013) who investigated the fussy time-driven ABC; and Fortin *et al.* whose work was about the measurement of the success of ABC and its determinants in Canada.

1.2 Statement of the problem

The GIPF adopted ABC in 2009 in order to be able to cost the administrative services. However, the GIPF has not done a post-review on the implementation of ABC at the GIPF. Therefore, the purpose of this study was to evaluate whether the implementation of ABC at the GIPF is effective. The aim of this study was to determine the benefits achieved and the barriers and challenges that might have been encountered so far in the implementation of ABC at the GIPF. This study was, therefore, an empirical investigation which analysed the experiences and perception of ABC in the pension fund industry.

1.3 Research questions

The main objective of this study was to investigate the effectiveness of the implementation of the ABC system by the GIPF. The study sought to determine any challenges that the organisation was likely to face during and after implementation. This study therefore sought to answer the following specific questions;

1.3.1 Was ABC implemented effectively at the GIPF?

1.3.2 To what extent did the programme achieve its goals and objectives?

1.3.3 What challenges did the organisation encounter in the implementation process and post-implementation?

1.3.4 What were the experiences and lessons learned from the implementation process?

1.3.5 Are there any measures put in place by the GIPF to upgrade the ABC system?

1.3.6 What benefits did the GIPF gain by implementing Time-Driven ABC?

The relevance of the above-mentioned questions was considered in the context of the central argument of the study, which was twofold. Firstly, although ABC is superior to the traditional costing approach, the literature agrees that it also experiences some limitations and barriers. Therefore, it is important for firms who implemented ABC to identify these limitations and barriers to enable them to further refine their ABC practices. Secondly, the evolvement of the ABC approach in recent times may require that firms rethink their ABC practices and consider an upgrading to time-driven ABC.

1.4 Significance of the study

The contribution of this study is to enhance and create awareness to implement ABC for pension funds. The study also serves as a framework for pension funds, which have not yet adopted ABC to improve their costing systems. ABC may provide more reliable and accurate information that enables pension funds to remain competitive.

1.5 Limitations of the study

The scope of this study considered certain limitations, which might be present in this study and future studies. Possible limitations in this empirical study were:

Firstly, the scope of the study was limited by the sample size which included only the executive management/managers/finance and investment department staff members of the GIPF. Secondly, the number of respondents who possessed ABC knowledge was small. Thirdly, the level of ABC knowledge among the respondents who actually make decisions is less. Finally, due to time constraints, the researcher was not able to carry out interviews with all the respondents and interact with them in order to eliminate misrepresentations in the questionnaires.

1.6 Definition of terms

Activity refers to a process element that consumes substantial resources to produce an output.

Activity cost drivers are those activities or events that relate to or cause costs to be incurred (Chea, 2011). These include activities such as setup.

Business process is the network of associated and independent activities that are joined by the outputs they exchange (Eggers & Bangert Jr, 1998).

Function refers to the aggregation of activities that are related by a common purpose. These include departments such as finance, loss control, human resources management and other functions such as internal audit and investment.

Tasks are the combinations of work elements or operations that make an activity.

Operations are the smallest units of work used for planning or control purposes.

1.7 Overview of the study

Chapter 1: Introduction and background to the study. The chapter comprises the introduction, problem statement, background and significance of the study. The limitation of the study, definitions of terms and overview of the study were also outlined.

Chapter 2: Theoretical review: Activity-based costing. This chapter provides a literature review concerning the application of ABC systems in small manufacturing firms. The chapter focuses on the benefits derived from implementing ABC, the barriers impeding its adoption, the advantages and disadvantages of ABC and the practical issues regarding ABC implementation.

Chapter 3: Research design and methodology. In this chapter, emphasis was placed on the research design and methodology employed in this study. The sampling and data collection method was discussed. The method of data analysis and statistical techniques applied in this study were also outlined.

Chapter 4: Data analysis and interpretation. This chapter discusses the analysis, interpretation and evaluation of the research findings.

Chapter 5: Summary, recommendations and conclusions.: In this chapter, the conclusions and recommendations arising from the findings of the study were discussed. A framework of advantages, practical problems and best practices were

developed. In addition, avenues for future research were suggested and the limitations of the study were also outlined.

1.8 Conclusion

This chapter laid the foundation for the study. The main issues discussed in the chapter include the background and orientation of the study, statement of the problem, the research questions and the significance of the study. The chapter also discussed the limitations of the study.

The next chapter will consider the conceptual framework for cost accounting. Chapter two will also consider a number of studies that have so far been undertaken in other jurisdictions in relation to the application of the ABC system.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

An understanding of issues surrounding the adoption of ABC through an exposition of literature will enable one to have a clear understanding of the ABC theory and how the ABC system fits into the cost accounting framework. It is that understanding which assists the researcher in answering the research questions of this study. The evaluation of ABC implementation at the GIPF can be done effectively if there are clear answers to the research questions.

The theoretical framework covers the development of the traditional cost accounting systems. It further deals with the different types of costs and the allocation of those costs to products. The chapter lays the foundation of cost accounting principles. It is the cost accounting principles and terminology that ABC needs to comply with or seeks to improve. The terminology and principles are discussed under section 2.2 of this chapter that examines the theoretical framework of cost accounting systems. Chapter two considers a number of issues regarding the history of ABC. The issues that this chapter considers include the theoretical framework and the exposition of the history of the ABC system under section 2.2 and 2.3 respectively. Section 2.4 discusses the need for the ABC system, section 2.5 is about ABC implementation procedural issues, section 2.6 concerns other implementation issues, 2.7 conducts an evaluation of an ABC system in the service industry, section 2.8 is about the benefits of implementing the ABC system in a service industry, section 2.9 considers the challenges that may be encountered by an entity when implementing an ABC system,

section 2.10 addresses the introduction of TDABC, whilst section 2.11 concludes with a summary of the chapter.

2.2 Theoretical background to costing

2.2.1 General background to costing

The theoretical framework section examines the classifications and definitions of different types of costs. The section further examines the accumulation, allocation and apportionment of costs in a cost accounting systems setup. The section examines the absorption of overheads into a final product based on the selected basis of absorption. The purpose of this section, namely, a general background to a costing framework, is to introduce the reader to costing concepts related to ABC. Therefore, this section is merely a generic discussion that does not refer to specific studies.

The issue of cost classification can be controversial. Different organisations may hide the true costs of certain products by reporting them under certain line items. For example, the British Broadcasting Corporation (BBC) was once accused of hiding the true cost of running the individual channels. The BBC had reported all the costs from different channels under one line item such as cost of gathering news (Seal, Garrison, & Noreen, 2012). It is against such cost reporting practices that costs should be clearly defined as to whether they are for a manufacturing or service provision.

The majority of costs in any organisation can either be classified as direct costs or indirect costs. Direct costs are always used to compile the cost of something, while indirect costs may not be assigned to such a cost analysis (Bragg, 2016). In a

manufacturing setup, the costs can be identified as manufacturing costs and non-manufacturing costs. Manufacturing costs are further broken down into direct materials, direct labour and manufacturing overhead costs (Bhimani, Horngreen, Datar, & Rajan 2012; Seal *et al.*, 2012).

According to Seal *et al.* (2012), direct materials are those materials that can be identified in the final product. They are also called raw materials. Seal *et al.* (2012) further argue that these materials form the integral part of a finished product and that they can be physically and conveniently traced to the product. There are circumstances where costs are incurred specifically for a batch or contract. Such costs do not need to be spread to batches or contracts. They are allocated directly to that specific batch or contract. It should also be recognised that there are other materials that may not be classified as direct materials due to their level of significance. These materials are known as indirect materials. They cannot be easily identified and traced to specific products (Seal *et al.*, 2012).

The second component of direct costs is direct labour. Some literature refers to this cost item as touch labour (Seal *et al.*, 2012). The direct labour component of a product refers to that labour cost which can be traced directly to the product. Direct labour refers to the remuneration paid to production workers for work directly linked to the saleable product (Lucey, 2009). There are, however, other indirect labour costs that are treated as part of manufacturing overheads.

The third component of manufacturing overhead costs is known as the non-manufacturing costs or non-manufacturing overhead costs. The two major sub-

categories of this class of costs are marketing and selling, and administrative costs. Non-manufacturing costs are not related to the production of goods. Having identified the different types of costs, the next issue that is examined under the cost accounting framework is the broad classification of costs and the different cost methods. There are two broad classifications of costs that are associated with any accounting system. The terms are product costs and period costs (Lucey, 2009).

The costing accounting system is completely independent from financial accounting. The two systems support each other. For financial reporting purposes, product costs refer to all costs that are related to the purchasing or production of a product. Product costs will normally include costs such as direct materials, direct labour and manufacturing overheads. Product costs are then treated as expenses when the products are sold (Bhimani *et al.*, 2012; Seal *et al.*, 2012). If the products remain unsold, the costs form part of the inventory; hence, under such circumstances, they are not expensed in the period they are incurred. This is different from the period cost approach. Period costs include all costs that would have been excluded from products. Under marginal costs, all overheads that are not treated as product costs are then expensed in the period they are incurred.

2.2.2 The build-up of overheads in a cost system

The costs identified as overheads are generally made up of a number of indirect costs. The nature of overheads is, therefore, complicated by the process of accumulating the overheads from different cost items. The process of calculating prime costs is, therefore, considered as less complicated (Lucey, 2009). The process

can further be simplified by defining cost centre, cost allocation and cost apportionment.

2.2.2.1 Cost centre

Lucey (2012) defines cost centre as a production or service location, function, activity, or item of equipment for which costs are accumulated. In other words, each cost centre is a collecting place for certain costs before they are further analysed. Firms have the freedom to classify certain activities' cost centres for cost accumulation purposes. In the majority of cost accounting systems, mainly production and service cost centres (departments) are identified.

2.2.2.2 Cost allocation

Cost allocation can be defined as the assignment of the whole item of cost to a single cost unit, cost centre, period or account (Lucey, 2009). Cost allocation involves charging overheads directly to specific departments such as production and service. The interpretation of this definition is that the cost is not split or shared among the cost units or centres. Where overheads relate to more than one specific department, they must be shared between these departments. This is done through a process called overhead apportionment. Overheads must be apportioned between different production and service departments on an equitable basis that reflects the consumption of the overhead.

2.2.2.3 Cost apportionment

There are situations where it may be difficult in the accounting system to effectively allocate costs to different cost units or centres. The problem is resolved through the

use of cost apportionment procedures. The term “apportionment” is defined “as the art of spread over two or more cost units, centres, accounts, or time periods” (Lucey, 2009). Under normal costing practices, most companies use floor area, space occupied, number of employees, value of plant, number of material requisitions issued and units consumed as the basis of cost apportionment. The bases are normally used on overheads such as rent, canteen facilities, depreciation, electricity costs, store keeping and material handling (Bhimani *et al.*, 2012).

2.2.3 Traditional costing methods

Lucey (2012) defines a costing method as a system that is designed to suit the manner in which goods are manufactured or processed or the manner in which services are provided. This section will examine the traditional costing methods and the general cost accounting that are involved. There are basically two traditional costing methods. These are the specific order and continuous process methods. These two methods come up with product costs at different levels. However, these two methods can be further subdivided.

2.2.3.1 Specific order costing

Specific order costing is applied to situations where the work involves separately identifiable batches, contracts and jobs. Therefore, its main sub-divisions are job, contract and batch costing (Lucey, 2009).

2.2.3.2 Continuous operation/process

The continuous method is, at times, referred to as the unit method. The continuous method is more applicable where goods or services form a sequence of processes

(Lucey, 2009). As with the specific order method, the continuous method has its own sub-divisions. The sub-divisions are process costing and service function. The process costing includes the joint product and by-product costing (Seal *et al.*, 2012). However, batch costing is also found in continuous operation costing.

2.2.3.3 Cost accounting principles and techniques

Cost accounting dictates that, in any manufacturing or service organisation, costs must be accumulated and assigned somehow. These fundamental costing principles also demand that there be cost centres, cost objects, cost tracing, cost allocation and absorption (Bhimani *et al.*, 2012).

The above-mentioned principles used in the traditional costing methods are the same principles that are utilised by an ABC system. The difference is that an ABC system utilises a number of cost drivers and a variety of cost centres. Hence, the ABC system still fits in the general cost accounting framework. The major issue with ABC is the removal of the arbitrary allocation of overheads by tracking how activities actually consume resources (Haroun, 2015). It identifies those activities that drive costs and charges them according to consumption.

2.3 History of the Activity-Based Costing system

ABC was developed in the late 1980s by Robert Cooper and Robert Kaplan (Chen, 2011). They defined ABC as an approach to solve problems of the traditional cost management systems. Cooper and Kaplan brought the ABC body of knowledge through their publication in the Harvard Business Review in 1988 (Chen, 2011). It is claimed that the ABC system is a different way of viewing costs. The system was

developed as a realisation of the fact that the traditional costing methods were not adequately supplying cost information that was suitable in a changed business environment (Stevenson & Cabell, 2002). ABC was developed mainly for the manufacturing sector (Burnet, 2009).

Despite being reported and researched extensively, the adoption and use of the ABC system in the manufacturing sector had its share of criticism. The system was accused of being expensive to implement. This was also seen as the basis for the latter abandonment by managers (Kantor & Maital, 1999). ABC has been criticised for being inconsistent with the rules of continuous improvement and quality control. However, this was a misunderstanding of the ABC system (Chea, 2011). Moreover, the costing system has been applied in other sectors, especially the health care system and the service industry in general (Burnet 2009; Albright, 2007). Burnet (2009) argues that ABC is more complex than traditional methods. The complexities of ABC did not, however, hinder attempts to adopt ABC in the service industry. The system was extended to the service sectors with much reported success (Haroun, 2015; Heany, 2004; Chea, 2011; Kantor & Maital, 1999; Liu, Mitchell, & Robinson, 2008). See Figure 1 for an explanation.

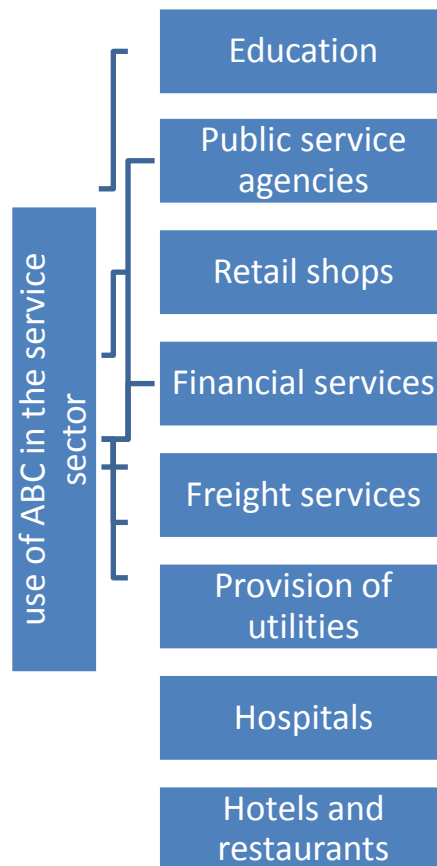


Figure 1: Application of ABC in the Service sector

The ABC system was also undertaken by the Oxford University Library Services (OULS) with amazing results being claimed (Heany, 2004). The adoption of ABC at OULS resulted in cost efficiency. It was claimed that, while the study found differences in cost allocations, the most important outcome was that ABC enabled the OULS to come up with the right questions to ask in dealing with cost allocations for the following year (Heany, 2004).

In another study of the Crown Prosecution Services (CPS) of England and Wales, notable findings were also reported. The CPS was facing serious budgetary and cost accounting challenges (Liu, Mitchell, & Robinson, 2008). The study found that there was a marked improvement in the behavioural change, quantification of resources,

bottlenecks and identification of excess capacity after the unit had used ABC in its budgetary system. Similar findings on the use of ABC for budgeting purposes were also reported. It was found that the main advantage of using ABC is its support for the budgeting process, followed by its aid for cost reduction (Innes, Mitchell, & Sinclair, 2000).

According to Chea (2011), financial institutions, regional banks, investment banks, food outlets, insurance companies, utility companies and automotive retailers made good progress in the application of ABC systems. The main reasons for the adoption of ABC in these sectors were strategic decisions and possibly internal transfer activities.

In the service sector, the application of traditional costing methods was also found to be inappropriate as it resulted in the misallocation of costs between services and customers. Other studies have found that the use of traditional methods results in cross-subsidisation of costs from one service to another and subsequently to the cross-subsidisation between customers (Neves & Justo, 2007). It is also argued here that the use of ABC results in an understanding of resource utilisation by each individual customer, hence the opportunity to better check the profitability of each customer through informed pricing policies.

2.4 The need for an Activity-Based Costing system

Service firms are generally different from manufacturing entities in respect of the fact that service firms have relatively less fixed costs than the manufacturing entities. Management accounting information systems are needed for services firms (Berts &

Kock, 1995). Service firms require such systems basically for two reasons. Firstly, the heightened competition calls for improved planning and control. The second justification relates to the level of growth that most service firms have enjoyed. A number of authors have claimed that modern companies must ensure that all their business processes are transformed in order to remove inefficiencies and the related costs must be known (Cannavacciuolo, Illario, Ippolito & Ponsiglione, 2015; Eggers & Bangert Jr, 1998; Gunasekaran, 1999; Kaszubski & Ebben, 2005).

According to studies in the service industry, there is a high demand to achieve accurate and relevant cost information (Haroun, 2015). Traditional cost accounting is accused of using single cost drivers such as labour hours. In the modern business environment, labour has been replaced by technology and is likely to account for a small proportion of costs (Stevenson & Cabell, 2002). The traditional costing methods are therefore criticised for the arbitrary allocation of costs to products, resulting in distorted product cost information, thus leading to incorrect decision-making (Chea, 2011); hence the need for ABC in either the manufacturing or service industry. It is further claimed that due to the need by companies to remain competitive in the global market, there is justification to have a clear understanding of the causes of overhead costs (Tuominen, 2012). This need, therefore, drives the desire to adopt and implement an ABC system. It is further argued that the demand for ABC has been brought about by the growing competition of service companies, the need for higher quality, better financial performance, greater flexibility and greater customer satisfaction (Metaxiotis, 2005). This has led to a demanding business environment that requires the adaption to and changing ways of competitiveness. Cost accounting information is required by management for

strategic decision-making including product pricing decisions. Activity-based costing is also associated with a good structure that allows easy information tracking, information sharing and problem solving (Kaszubski & Ebben, 2005). Most of these decisions are concerned with pricing and strategy development (Cannavacciuolo *et al.*, 2015). The GIPF is no exception to these kinds of information demands. It is the production of accurate information that enables the organisation to make sound strategic decisions. Moreover, it is the allocation of overheads that makes the difference in costing a product or service (Haroun, 2015). The ABC system is handy as it is able to calculate the costs incurred in performing a service and the distribution of overheads. The system distributes the overheads accurately since it is based on resources consumed rather than on the arbitrary allocation of overheads as is done in the traditional cost accounting system (Haroun, 2015). Furthermore, the traditional costing systems have been accused of providing inaccurate information.

It has been claimed that traditional costing methods provide distorted cost information. This accusation stems from the fact that traditional methods rely heavily on predetermined volume levels as the bases of uniformly allocating overheads. The system is further accused of the failure of taking into account the different complexities, activities scope and the actual resource consumption by activities (Haroun, 2015). The shortcomings of the traditional methods deny management the provision of accurate cost information.

The management of any service firm including the GIPF, a pension fund, will need to be well appraised of certain key costs of providing services to its customers or members. Continuing budget pressure is forcing institutions to reconsider their

service delivery models. A number of institutions are now required to develop initiatives that lead to cost reduction and the improvement of efficiency in service delivery (Kaszubski & Ebben, 2005).

The following are some of the reasons that are used as justification for the adoption of an ABC system by different organisations (Gunasekaran, 1999; Kaszubski & Ebben, 2005);

- advancement of cost reduction initiatives through identification of value and non-value addition processes or activities;
- generation of sensitivity analysis scenarios that act as guidance to management when taking decisions;
- creating better awareness and the ability to trace costs for accounts that enable them to understand the operations of an entity; and
- assist in improving performance measures as ABC will capture accurate and reliable costs.

In a study conducted on JSE-listed companies, the respondents gave three reasons as the basis of implementing ABC. The majority of the respondents based their decision on the need to obtain accurate cost information related to cost control, cost allocation, cost setting activities as well the minimisation of costs (Sartorius, Eitzen, & Kamala, 2007). The study further found that the issue of product and service profitability, customer profitability and pricing decisions were also high on the agenda.

There are a number of processes that a pension fund undertakes as part of its normal course of providing its members with pension fund benefits. These activities need a thorough cost understanding. It is claimed that ABC as an accounting system offers a true reflection of costs on goods and services provided by an entity (Eggers & Bangert Jr, 1998). The main objective of the system is to ensure that a service is provided at a minimal cost while maintaining world class standards of service. However, traditional costing methods have been criticised as inefficient.

Traditional costing methods have been criticised for a lack of provision of non-financial information as a costing system that does not meet the needs of a modern environment, inaccurate costing, lack of encouraging improvements and systems which do not take into account the diversity of products and services (Gunasekaran, 1999). The studies have therefore noted that, unlike the traditional cost systems, ABC provides information that is sufficient for continuous improvements in a rapidly changing global economic environment (Gunasekaran, 1999).

2.5 ABC implementation procedures

2.5.1 ABC implementation steps

Some authors have acknowledged that the ABC system has been extensively researched but the evidence remains problematic (Sartorius, Eitzen, & Kamala, 2007). A number of authors have written on the steps of implementation of ABC that may be considered as the best possible procedure (No & Kleiner, 1997).

In the design of an ABC, a number of steps have been suggested by the inventors of the system (Kaplan & Anderson, 2003). The authors have suggested the following as

some of the key steps: development of an activity dictionary, determination of expenditure on each activity, defining an organisation's products and services and customers, and selection of activity cost drivers.

Moreover, other authors have sighted five key steps that should be considered when designing an ABC system. The approach involves the aggregation of activities, production of costs of activity reports, identification of activity centres, selection of cost drivers and judgement, and analysis of cost assignments (Gunasekaran, 1999; No & Kleiner, 1997; Innes *et al.*, 2000).

(i) Activity identification

No and Kleiner (1997) claim that it is both not feasible and uneconomical to use a different cost driver for each and every activity. It is, therefore, suggested that various activities of a similar nature and objectives should be identified and grouped together (No & Kleiner, 1997). It is further argued that by doing so, costs of tracking and allocating the costs related to these various activities would be, to a greater, extent eliminated. Gunasekaran (1999) argues that the aggregation of activities, whether the activities are performed by machines or humans, sets the structure and scope of an ABC system. He (1999) states that the identification of activities considers what is done with resources on an overhead area of an organisation.

Innes *et al.* (1994) argue that this forces the accountant to evaluate what is actually taking place in that specific business process. When activities have been identified, the approach would be to incorporate them into the ABC system. The primary objective is to report accurate cost information; hence, it is necessary to ensure that

both micro and macro activities are correctly and appropriately identified and pooled together. In the evaluation of the implementation of the ABC system at the GIPF, it would be proper to investigate the procedures that the entity undertook and the results thereof in its endeavour to identify the activities. A failure to have proper procedures and controls in the identified activities may not only lead to poor implementation, but also to a continued lack of a clear understanding of the GIPF's business processes and its resources consumption patterns. Thus, the volumes of activities involved may remain unknown (Gunasekaran, 1999). According to Turney and Stratton (1992, as cited in Gunasekaran, 1999), this can be achieved by visiting and interviewing the staff in each department in order to understand the activities that are performed. Gunasekaran (1999) further argues that activities should be grouped according to cost similarities. The process should provide sufficient and appropriate cost visibility and accuracy that allows management to take and make well-informed decisions.

(ii) Identification of cost pools

The second issue that an organisation has to consider in the implementation of ABC is the identification of cost pools. A cost pool is defined as that where the costs of a group of activities are grouped together (No & Kleiner, 1997).

It is further argued that these costs should be aggregated in order to determine how every activity consumes (No & Kleiner, 1997). These costs may be grouped as setup and quality control costs. It is from these cost pools that the costs are allocated to specific activities according to consumption (BPP, 2015). It is from these

accumulated costs in cost centres that management are able to allocate and apportion the accumulated costs.

According to Gunasekaran (1999), costs can be identified as related to an activity in terms of cost drivers. These costs can be directly charged to the activity. However, where resources are shared by several activities, the apportionment basis must be designed to apportion the costs to different activities. Cost allocation involves the assignment of these costs that are incurred directly by a specific activity or products. The costs are identifiable with that specific activity or product (No & Kleiner, 1997). Apportionment involves the assignment of common or jointly incurred costs based on cost drivers that reflect consumption or position of consumption. Gunasekaran (1999) argues that the apportionment reflects the activity consumption of the shared resources as closely as possible. These are normally identified at different levels of operation.

Gunasekaran (1999) notes that there are two contrasting views about the number of categories that should be part of an activity. The first view is that the only traceable costs should be included in the cost pool. The second contrasting view is that only facts that are relevant to the decision under consideration should be included in the cost pool. The above views are an indication that the issue of cost allocation and apportionment can be complex in practice. It is against this background that cost drivers would or should be indicated.

(iii) Cost drivers

The entity should identify cost drivers. Cost drivers are the factors which determine the size of the costs of an activity. These factors are known as cost drivers. The factors that cause an activity to consume resources result in costs being incurred. Cost drivers determine the measure of frequency and intensity of the demand placed on activities by the cost objects (Gunasekaran, 1999).

The cost driver rate is calculated by dividing the total activity costs by the volume or quantity of the cost driver. The selection of the cost driver is normally based on experience and personal judgement (Gunasekaran, 1999). Innes *et al.* (1994) note that there are basically three types of cost drivers, namely, pure volume, weight volume and situational cost drivers. However, in an ABC system, cost drivers may be identified at unit level, at batch level and at product and facility level. These levels of identification are different from the traditional costing systems.

Unit drivers are related to activities that are performed such that one unit of a batch is affected by the activity. While batch level drivers include those activities that facilitate the manufacturing of a batch of the same product, product cost drivers are those activities that need to be performed in order to continue a product in manufacturing. The total cost of these activities must be divided into the number of products that will be produced (Gunasekaran, 1999).

The last category of cost drivers to be considered is facility cost drivers. It is sometimes argued that these costs are difficult to identify and apportion. According to Gunasekaran (1999), factory cost drivers are traced to the product in some manner.

There are costs that are incurred in order to maintain the facilities that a company is using in the production of its products. In another study, ABC allowed a facilities group to identify cost drivers that could be eliminated, which helped them to avoid the traditional budget reduction process (Kaszubski & Ebben, 2005). However, while these cost drivers may be prevalent in a manufacturing environment, some of the cost drivers may also be found in a service organisation such as the GIPF. The errors are viewed as cost drivers since the errors lead to rework or tasks to be re-performed. Errors may also result in a faulty product or service. Errors may, therefore, drive maintenance costs which could have been avoided had the task been correctly undertaken at the initial stage.

- Denied access

A driver known as “denied access” results from the non-availability of a receipt of a product or service (Kaszubski & Ebben, 2005). In a pension or postal service bank, charges are likely to fall in this category. Denied access costs result from incorrect postal and physical addresses as well as closed bank accounts.

- Contractor error

A number of costs may be driven by the involvement of contractors and sub-contractors. Most of these costs become maintenance costs because of a contractor’s failure to make use of correct materials or procedures. When considering contract errors in the provision of services, the following issues need to be considered: The identification and correction of some of these cause drivers is likely to lead to strained relationships between managers and departments (Kaszubski & Ebben, 2005). This is mainly due to the fact that cause drivers are as a result of poor workmanship in the factory or at dispatch and receiving departments.

(iv) Determination of cost driver rate

In the process of determining cost drivers, a firm may adopt a two-stage approach. This involves identifying first and second stage cost drivers respectively (Bhimani, Horngreen, Datar, & Rajan, 2012; No & Kleiner, 1997). The first stage cost drivers trace costs input into identified service cost pools. All activities performed in a cost centre are represented by the cost pool in terms of the initial accumulation of costs. The accuracy of the reported costs is determined by the appropriateness of the chosen cost drivers. The second stage cost drivers allocate the accumulated costs in the cost pools to cost objects such as the unit of the service provided or goods produced.

(v) Cost allocation

An ABC system involves three major components, namely, cost objects, activities and resources. In the ABC system, costs are initially allocated to cost pools and then to the cost object (Van Damme & Van der Zon, 1999). The approach determines a cost driver rate that is used to allocate the cost of resource consumption to a cost pool. Thereafter, a second cost driver rate must be calculated. The second cost driver is used to assign costs to cost objects. At this second step, the decision must be made to accurately determine how much of the activity is used to make a cost object (Van Damme & Van der Zon, 1999).

2.6 Other implementation issues

The selection of adoption of the ABC system by an entity constitutes a strategic decision. The company is either one that is using other traditional methods or has not formally adopted a costing system. If so, it will be appropriate to consider a number

or a series of implementation issues that any organisation should examine before the full adoption and implementation of an ABC system (Gunasekaran, 1999).

Gunasekaran (1999) proposes that, before the adoption of ABC, an entity should consider some organisational issues. According to Gunasekaran (1999), it is advisable for an entity to select a specific purpose for the adoption of ABC. The system should then be designed with that specific purpose or objectivity in mind.

Gunasekaran (1999) provides some of the implementation steps. These are provisions of cost information for use in waste elimination, identification on non-value adding activities, marketing focus, product profitability and to provide information for supporting buy or make decisions.

2.6.1 ABC team

For the successful implementation of an ABC system, a designated team should be put in place to oversee the project. Gunasekaran (1999) contends that a company should develop a dedicated team that is composed of members drawn from other fields other than finance alone. The issue of the complexion of the team needs some serious considerations.

Cooper & Kaplan (1991) suggest that the team should have a minimum of four members from different backgrounds. Copper (1991) further suggests that the team leader should be an engineer. The other members should be an experienced cost manager with extensive knowledge of the company's cost accounting system, a production supervisor and an industrial engineer. Copper (1991) further stresses that

the company should have its own committee even if the company has hired an experienced consultant. As in any other project management team, the leader of this team should have the full support from senior executives of the company. The support would flow naturally if the executives are convinced that ABC will produce better results than its predecessor.

2.6.2 Organisational issues

The implementation of new systems will, to a greater extent, affect a company's various departments irrespective of the fact that a department may not be working directly with that new system. Innes and Mitchell (1994) suggest a number of organisational issues that a company or ABC teams should consider in the design and implementation strategy. The following are some of the issues: the number of products produced; the diversity of produced lines; overhead costs; major overheads related to quality scheduling; and balancing and changing of activities. Innes and Mitchell (1994) further argue that the team should consider the inclusion of direct labour and machines, the basis for allocating overheads, the sale of products through different channels and the need for different levels of attention by clients.

Having raised the above issues, it will be interesting to note how successful the GIPF was in implementing ABC. The success or failure need to be investigated whether it was due to factors other than organisational issues as advocated by Gunasekaran (1999) and Innes *et al.* (2000). The following are some of the generally recommended ABC implementation process steps in different industries (Gunasekaran, 1999):

1. identify the different overhead activities;
2. assign overhead costs to different activities using a resource driver;
3. identify activity drivers for each activity;
4. determine the activity driver rate by dividing the total costs by practical volume of activity drivers; and
5. multiply the activity driver rate by the activity consumption to trace costs to orders, products and customers.

Adapted from Stouthuysen et al. (2014)

Activity identification, primary cost driver identification, setting up of activity cost pools, secondary cost drivers and cost objects are some of the issues that should be considered. However, Gunasekaran (1999) identifies additional issues that should be taken into account. It is further stated that the objectives of the ABC system, ABC and organisational issues must be established for an efficient and effective implementation to take place (Gunasekaran, 1999).

2.6.3 Scope change

It has been suggested that a change in the original planned work leads to extra costs in the management of processes (Kaszubski & Ebben, 2005). In the case of pension, this scope of change may result from a change in policy and pension fund regulations that require additional work to be undertaken. A change in pension fund regulations may either result in increased benefits payouts or a reduction of benefit payouts.

2.6.4 Limitations of ABC

It is argued that some companies are not adopting ABC due to organisational, environmental and individual barriers (Cannavacciuolo, Illario, Ippolito, & Ponsiglione, 2015). Cannavacciuolo *et al.*, (2015) state that organisational barriers are those impediments associated with territorial and co-operated cultures. They (2015) also claim that individual impediments relate to fear of the unknown, including loss of control and status. The fear of learning new skills is part of individual impediments. The third group of impediments is related to environmental issues that are created by both internal and external stakeholders such as management, employees, regulatory agencies and other stakeholders.

While many positive aspects have been claimed for the adoption of ABC, there are some issues that are negatively associated with the adoption of the ABC system. Some of these issues are discussed in the sections below.

2.6.5 Linking all tasks to all products

The ABC system is designed with the objective of tracing costs to individual products or services. It is not possible to trace all tasks performed in the provision of a service to the individual service offered to a customer (Rundora *et al.*, 2013).

2.6.6 Resource requirements

An ABC system requires considerable investment in resources. These resources are required for design, implementation and operation. These resources include both monetary and capital, and human resources. Furthermore, ABC is time-consuming to develop and implement. It is argued that implementing and operating an ABC system

is more expensive than administering a traditional costing system (Rundora *et al.*, 2013).

2.6.7 Challenges of ABC

It is said that ABC is very complex to operate. The traditional ABC system has been criticised for being complex and expensive (Chanassad, Rattanamanee, Chaiprapat & Yenradee, 2014; Kaplan & Anderson, 2003; Stouthuysen *et al.*, 2014). More importantly, the system's criticism has been based on the question of subjective cost drivers, its difficulty in scaling the system on an enterprise-wide basis and the maintenance of the system when there are changes in processes, products, services and customers (Stouthuysen *et al.*, 2014). It has suffered criticism as a result of its negative impact on employee attitudes such as irritation and lack of commitment (Stouthuysen *et al.*, 2014).

2.6.8 ABC adoption rates and practical issues

Research has shown varied rates of adoption in the service industry, mostly in developed countries. A review of ABC studies undertaken during 1991 shows that, in 1991, the adoption of the ABC system was not that impressive (Sartorius, Eitzen, & Kamala, 2007). The adoption rates need to be considered in light of practical issues in the ABC adoption and implementation process. A number of these practical issues have been enumerated as follows:

- ABC benefits have exceed the cost of implementation of the system;
- top management provided adequate resources to the ABC initiatives;
- the ABC was tied to the competitive strategies of the firm;

- top management were committed to the use of ABC information for decision-making;
- compensation systems in the company were designed to motivate employees to implement the ABC system;
- there was consensus about the objectives and aims of ABC;
- the objectives and purpose of ABC were clearly stated and understood by both designers and users; and
- adequate training was provided for implementing ABC (Rundora & Selesho, 2014).

The above statements were posed to the respondents for ranking using a Likert scale of 1 to 5. The finding of the study revealed that the respondents' opinions, to a greater extent, were neutral in respect of these statements (Rundora & Selesho, 2014). However, Rundora and Selesho (2014) further reported that the highest ranked statement was that ABC's benefits exceeded the cost of implementing the ABC system.

2.6.9 Perceived barriers to the adoption of an ABC system

In a study of manufacturing SMEs in South Africa, Rundora and Selesho (2014) identified a number of factors that act as barriers to ABC adoption. The following are some of the commonly cited barriers:

- high cost of implementing ABC;
- resistance to change;
- involves a great deal of work;
- time-consuming;

- lack of top management support;
- lack of cooperation between departments;
- lack of ABC knowledge;
- problems in defining cost drivers;
- problems in identifying activities;
- high cost of consultations; and
- higher priority towards other changes or projects.

The above perceived barriers have also been found as barriers in other studies. According to Fadzil and Rababah (2012), in addition to the above cited barriers, the following are also some of the barriers encountered by Jordanian companies: lack of experienced consultants; lack of accounting bodies; small percentages of overheads; being satisfied with the current system; lack of internal resources; and change of company structure to fit the selected activities. However, according to Rundora and Selesho (2014), there are differences in perceptions of these barriers between users and non-users.

2.6.10 Perceptions of effective implementation of an ABC system

A number of issues have been identified as indicators of an effectively implemented ABC system (Gunasekaran, Williams, & McGaughey, 2005). The following are some of the issues that have been cited as possible indicators of successful implementation:

- accurate allocation of costs to functions or activities;
- reduction of costs per internal clients;
- improved performance measurement;

- cost reduction efforts;
- increased customer satisfaction;
- elimination of waste by pointing out non-value adding activities; and
- improved budgetary process (Pike, Tayles, & Abu Mansor, 2011)

These issues were covered in section C of the research instrument. However, other issues were also included. The above items are also considered not only as indicators, but also as outputs of ABC (Innes *et al.*, 2000). Englund and Gerdin (2008) recommend that further studies should be undertaken in the area of implementation success. They claim that success or effectiveness are relative terms. According to CIMA (2008), ABC fails because organisations do not take time to identify what they are trying to achieve and then take the necessary steps.

2.6.11 Measures and requirements for upgrading

There is no system that lasts forever without undergoing some revision. Gunasekaran *et al.* (2005) suggest that the need for a new system and performance measurement, coupled with the pressures, approaches and 21st century enterprises, demand a system revision. The following are some of the issues that set the agenda for the revision of an ABC system:

- the need to create and implement a new improved system;
- the need for behaviour change;
- the need for process and procedure re-engineering; and
- the need to introduce time-driven ABC.

2.6.12 Comparison of traditional costing and ABC

Rundora and Selesho (2014) have suggested the following as some of the issues that should be considered when comparing traditional costing techniques with ABC:

- effective cost management;
- service cost determination;
- budgeting process complexity;
- accounting for strategic plan activities; and
- improving management reporting and cost analysis.

2.7 Benefits of implementing ABC

A number of authors have claimed that ABC offers several benefits to an entity (Gunasekaran, 1999; Metaxiotis, 2005; Rundora *et al.*, 2013). The benefits have been reported as:

- ABC provides an accurate method of costing products and services (CIMA, 2008). It is argued that the ABC system provides more accurate product line costing (Innes, 1997). The benefit has been ascribed to situations where non-volume overheads are significant and diverse products and services are produced or offered (Rundora *et al.*, 2013).
- ABC allows for a better and more comprehensive understanding of costs and their causes (CIMA, 2008). ABC assists in the identification and understanding of cost behaviours. This further enables easy cost estimation (Blocher *et al.*, 2008).
- ABC exposes costly and non-value adding activities, thereby drawing management's attention to these activities so that management focuses on them with the view to reducing or eradicating them (CIMA, 2008). ABC, therefore, provides

information to identify areas where process improvement is required (Rundora *et al.*, 2013; Innes *et al.*, 2000; Blocher *et al.*, 2008).

An ABC system has been considered to be a flexible system. It is argued that ABC is flexible enough to analyse costs by a cost objective (Blocher *et al.*, 2008). The system extracts the processing area of management responsibility and customers (Innes *et al.*, 2000). It is further claimed that the ABC system allows management to make strategic decisions (Rundora *et al.*, 2013). These strategic decisions are concerned with product pricing, product lives and market segments (Berts & Kock, 1995).

Moreover, ABC provides information on product or service specifications that have the greatest cost impact. This cost information is used by markers in negotiating competitive prices with customers (Bufi, 2014). It is also claimed that by providing improved product costs, the ABC system allows for improved job costing, budgeting and planning (Innes *et al.*, 2000). Bufi (2014) also claims that the ABC system allows for better pricing since ABC reveals costing information that differs among product specifications. This makes it easier to price products and services based on their specifications.

Furthermore, ABC provides better costing information to management. This additional information is used by management to identify unused or idle capacity. This allows management to have a clear picture of the costs from unused capacity that are unaccounted for (Rundora *et al.*, 2013).

The ABC system does not only offer benefits that are related to product or service costs. It also allows for easy internal performance measurements. Performance measurement is the proceeds of quantifying the efficiency and effectiveness of actions that a business undertakes (Needy *et al.*, 2003; Bufi, 2014). Performance measurement is a tool that is used to measure goal accomplishment, to predict future performance and to give feedback. The feedback from the performance review either causes management to take corrective action or to do nothing if the results are satisfying.

2.8 Challenges in the implementation of ABC

2.8.1 Challenging ABC logic

A number of authors have also challenged certain claims made by some practitioners on the ABC system (Piper & Walley, 1990; Dunne & Wolk, 1977; Needy *et al.*, 2003; Bakke & Hellberg, 1991; Maskell, 1988). The areas of concern from these authors are mainly concerned with ABC logic, ABC superiority and ABC's usefulness, especially in the long run, as well as the implementation costs and failure stories.

2.8.2 ABC logic

ABC is based on the fundamental principle that it is activities that cause or drive costs. However, it is this assumption that Piper & Walley (1990) have attacked. They argue that the relationship between activity and costs has not been tested empirically. The authors argue that the need for competitiveness should rather be considered as the fundamental assumption of ABC.

2.8.3 ABC usefulness

The ABC system has been criticised for being narrowly focused on current cost schedule. Needy *et al.* (2003) claim that the usefulness of ABC is, therefore, limited. The system is further criticised for not taking into account the principles of continuous improvement total quality management (Needy *et al.*, 2003).

In addition, the ABC system does not focus on customers, it is not process orientated, does not involve employees and does not undergo organisational learning (Turney & Stratton, 1992). The system is further criticised for being limited in short-term production scheduling decisions.

2.8.4 Implementation costs and failure stories

One of the key criticisms of ABC has been its complexity. Bui (2014) and Maskell (1998) note that the analysis was too complicated to be of any practical value. The basis of the criticism was its use of so many activity-based factors. A number of failures in ABC were also observed in the 1990s (Gosselin, 1997). However, it was noted that the failures were due to the inactivity of the system, coupled with the absolute softwares that were not integrated.

2.9 Evaluation of ABC in a service organisation

The use and success of the ABC system in other industries has been noted to be evolving at a very slow pace. Delpachitra (2008) notes that the adoption of ABC in Australia in the financial service has been slow. He (2008) further notes that the application of ABC will not be successful without a benchmark. A number of reasons have been put forward as factors that are associated with the successful

implementation of ABC by any firm, whether a service provider or not (Pierce & Brown, 2006). The following have been cited as some of the factors:

- strong top management support;
- a positive contribution to the image of management;
- ABC linkage to performance evaluation and compensation;
- sufficiency of resources and the provision of training to staff;
- clarity of ABC objectives; and
- linkage with other competitive strategies such as just-in-time and quality control.

It is noted that some insurance companies were reluctant to invest in ABC applications as the process would require benchmarking and releasing of confidential and sensitive information (Gunasekraran, 1999). However, others have implemented it without benchmarking (Mortaji *et al.*, 2013). It is against such a background that the researcher aimed to find out whether the lack of or the success of ABC at the GIPF did in fact consider the issue of benchmarking.

2.10 Time-driven Activity-Based Costing system

2.10.1 History of TDABC

The traditional ABC method, which had been viewed as a panacea for all costing challenges, was later criticised for being expensive to implement (Kaplan & Anderson, 2003). The traditional ABC system involved a number of expensive and time-consuming processes. This called for an improvement in the system to one that was time-based and efficient. Kaplan and Anderson (2003), having realised the fading of ABC popularity, introduced TDABC (Chanassad *et al.*, 2014). However, it

was observed that the first initiatives to develop TDABC were by Robin Cooper (Kaplan & Anderson, 2003).

The criticism of traditional ABC led to the birth of time-driven ABC (TDABC). Kaplan and Anderson (2003) contend that TDABC only requires two parameters compared to traditional ABC which has numerous parameters. The two parameters for TDABC are the unit cost of supplying capacity and the time required to perform an activity. It was claimed then that TDABC was not a mere hypothetical shift from traditional ABC.

2.10.2 TDABC model approach

The new TDABC system introduced the use of cost equations (Kaplan & Anderson, 2003; Chanassad *et al.*, 2014; Stouthuysen *et al.*, 2014). The approach formulates equations for each activity. These formulas are known as time equations. The model uses the time actually spent on an activity rather than the percentage of time. TDABC applies time equations to determine how different time drivers drive the time consumed by each activity (Chanassad *et al.*, 2014; Kaplan & Anderson, 2003).

The time-driven ABC system has been commended for its ability to reduce the challenges of handling large amounts of information as well as a reduction in computational complexities (Chanassad *et al.*, 2014). It is further argued that TDABC has the ability to handle varied environments. Multiple cost drivers for each activity may be used in a complex environment. It is argued that this produces more accurate cost estimations than traditional ABC (Stouthuysen *et al.*, 2014).

In determining costs or resource utilisation, management should always have a cost management that allows the measurement of costs related to unused capacity. TDABC permits management to review costs related to capacity utilisation and facilitate decision-making regarding the reduction of those costs that are driven by the underutilisation of capacity (Stouthuysen *et al.*, 2014). These reviews have been observed to be time-consuming and costly, hence the need to shift to TDABC (Kaplan & Anderson, 2003). The idea of shifting from ABC was not to abandon ABC completely. It is argued that the shift was intended, in other words, to seek improvement on traditional ABC. In terms of the implementation of TDABC, it is noted that there are many similarities with traditional ABC, the major difference being the use of time actually spent on an activity (Stouthuysen *et al.*, 2014). A summary of the implementation steps show that traditional ABC has five steps, while TDABC has six steps (see Table 1below):

Comparison of the traditional ABC and TDABC systems:

ABC	TDABC
1. Identify the different overhead activities.	1. Identify the various resource groups.
2. Assign the overhead cost to various activities using a selected resource driver.	2. Estimate the total cost of each resource group.
3. Identify a cost driver for each group.	3. Estimate the practical capacity of each resource group.
4. Determine the activity driver rate by dividing the total activity costs by the practical volume of the activity driver.	4. Calculate the unit cost of each resource group by dividing the total assets of the resource group by the

	practical capacity.
5. Multiply the activity driver rate by the activity driver consumption to trace the costs to orders, products or customers.	5. Determine the time estimation for each event, based upon the time equation for the activity and characteristics of the event.
	6. Multiply the event cost of each resource group by the time estimate for the event.

Table 1: Comparison of the traditional ABC and TDABC systems

Adapted (Chanassad *et al.*, 2014; Stouthuysen *et al.*, 2014).

2.10.3 Benefits of Time–Driven Activity-Based Costing

The introduction and adoption of the time-driven ABC system was noted to produce beneficial results (Kaplan & Anderson, 2003; Chanassad *et al.*, 2014). According to these studies, it has been shown that the following are some of the crucial features: TDABC was easy and fast to implement, maintain and update; and TDABC could easily integrate with current data from other installed Enterprise Resource Planning and Customer Resource Management systems. This was found to be less costly and speedy to implement. It was further observed that TDABC allowed management to scale the whole company. The system also allowed companies to incorporate specific features for orders, processes, supplies and customers, while allowing for the visibility of process efficiency and capacity utilisation (Chanassad *et al.*, 2014). Therefore, time-driven ABC allows management to manage future demand. Management can forecast future resources using predicted order quantities and complex.

2.10.4 Challenges of TDBAC

The time-driven ABC system was seen as an improvement on the traditional one. However, TDABC had its own challenges. TDABC was criticised for its inability to account for variations under conditions of uncertainty (Chanassad *et al.*, 2014). This inability, therefore, leads to insufficiency of cost management information, thereby causing inappropriate decisions to be taken by management. This further leads to another variation of the ABC framework called fuzzy time-driven ABC. The objective of the previously mentioned study was to assess the handling of information under conditions of uncertainty (Chanassad *et al.*, 2014).

2.11 Summary

Chapter two examined the theoretical framework of cost accounting, the ABC literature from traditional ABC, time-driven ABC and fuzzy time-driven ABC. The chapter examined the historical background of ABC, the justification for the adoption of ABC, the implementation procedure and other organisational implementation issues that are crucial to the implementation process. The chapter proceeded to examine literature on the benefits of ABC and the challenges of the ABC system. The chapter concluded the presentation of the literature review with a discussion on time-driven ABC including fuzzy time-driven ABC. The benefits and challenges of the time-driven activities were also reviewed. Chapter two is followed by the presentation of chapter three. Chapter three discusses the research methodology of the study in detail.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter presents the research methodology used in this study. This study followed an epistemological research philosophy of positivism, which implies that the researcher is neutral and the outcomes of the study are verifiable. This study is quantitative in nature and a deductive reasoning approach was followed, meaning that predetermined statements were tested. In this study, statements were tested by means of a structured questionnaire.

The chapter further provides explanations and details on the research design, population, sampling methods, research instrument, procedures, data analysis approach, observation of ethics and a conclusion for the chapter. The above issues are discussed in section 3.2 to 3.8 respectively.

3.2 Research design

Research design is the grand plan on how research will be conducted. Heppner, Kivlighan, & Wampold (2008) argue that a research design is a plan of how a researcher plans to achieve a particular task. The plan provides a structure that informs the researcher as to which theories, methods and instruments the research is based on.

De Vaus (2006) states that the research design refers to the overall strategy that a researcher chooses to integrate the different components of a study in a coherent and logical way, thereby, ensuring that the research problem will be effectively

addressed; it constitutes the blueprint for the collection, measurement and analysis of data. The research design can identify the research problem clearly and justify its selection, particularly in relation to any valid alternative designs that could be used. This study took a qualitative research method approach. A qualitative research method is chosen to benefit from the advantages of qualitative research, namely, a more in-depth discussion with respondents which reveals new insights that cannot be detected by the quantitative approach (Creswell, 2009).

3.3 Population

While the population of a study has been expressed differently by different authors, the basic explanation of a population remains the same. According to Creswell (2009) the target population is a collection of elements that possess the information pursued by the researcher and about which interpretations can be made. Suen and Ary (2014) define the population as the abstract idea of a group of many cases from which a researcher draws a sample and from which the results from a sample can be generalised. Graziano & Schroeder (2010) also define the population as a larger group to which all objects or people of interest belong. It is a requirement for a researcher to decide on the characteristics and size of a population for each study. A population is normally a group or collection of objects or people who form the core participants. The population in this study was composed of one hundred and ninety-seven permanent employees from the seven departments of the GIPF.

3.4 Sample

Bordens and Abbot (2005) define a sample as a small group chosen from the larger group. Sekaran and Bougie (2010) state that a sample greater than 30 and less than

500 units of analysis is suitable for most types of research. The study used a sample of thirty-eight staff members from the GIPF departments, who were purposively selected. The sample consisted of seven Heads of Department (HODs), who completed the questionnaire during a (structured) interview, while the remaining thirty-one employees completed the questionnaire on their own.

3.5 Research instruments

Zikmund (2000) states that a questionnaire as a research instrument is used for data collection due to its ability to accommodate a large sample size at a relatively low cost and ease of administration. Questionnaires were self-administered to the respondents in order to achieve a higher rate of response. This method was chosen because it is feasible and response rates can be increased by follow-up procedures (Strydom, Fouche, & Delport, 2002). According to Wheather and Cook (2000), this type of questionnaire involves a structured sequence of questions designed to draw out facts and opinions, which provide a vehicle for recording the data generated from a research study. It can also be said to be an instrument consisting of a series of questions and other prompts for gathering information from respondents as presented in chapter four (Rundora *et al.*, 2013).

3.6 Procedure

A structured questionnaire is used in large surveys where specific answers are anticipated; consequently, a structured questionnaire was used in this study. The questionnaire guided the investigation on how the current ABC system could be improved and refined. The questionnaire helped to evaluate whether the

implementation of ABC at the GIPF was effective or not. The research instrument was distributed online to the selected sample.

3.7 Data analysis

Descriptive statistics were used to summarise the quantitative data from the questionnaires. Creswell (2009) states that a study employing a quantitative approach seeks to explain and quantify data with the application of statistical analysis. During the structured interviews, notes were made to assist the researcher with the interpretation of the results from all the completed questionnaires. The results from the interviews were statistically analysed together with the results of the other/remaining questionnaires to determine whether there were significant differences between respondents' perceptions, because it can be hypothesised that perception differences may exist between groups, for example, HODs versus other staff members, financial staff versus other staff, highly experienced staff versus low experienced staff, etcetera.

3.8 Research ethics

According to Creswell (2009), a researcher should develop an informed consent form for participants to sign before engaging with the research and also gain the agreement of individual authorities to provide access to study participants at research sites.

Research principles require that a researcher takes a number of ethical considerations into account when undertaking research. Such considerations address issues of confidentiality, exposure to risks, fair treatment and the right to correct information. Graziano & Schroeder (2010) state that researchers are required to protect

participants against deception, dangerous procedures and invasion of privacy. The use of informed consent as a safeguard is therefore recommended. According to Cooper *et al.* (2012), business researchers must be very honest and professional in their conduct of research studies if they are to be trusted by society. Researchers, through their research, may deceive business in obtaining confidential information which is commercially sensitive, such as customer lists, product pricing and other sensitive information. Such information may have serious commercial consequences for participants if misused by researchers if obtained under false pretences. Participants must, therefore, have the option to choose when to participate and the amount of information to divulge.

Ghauri and Gronhaug (2010) as well as Graziano and Schroeder (2010) contend that researchers must uphold strict confidentiality. Upholding of confidentiality, therefore, demands a balance between the identification of participants and delicate information versus objectivity in the presentation of the data and the findings of the data. The element of confidentiality is very important in this study since most of the information is either sensitive financial data or members' personal information.

Ghauri and Gronhaug (2010) note the following as some of the key ethical issues that any researcher should observe before and during the research process: preserving participants' anonymity; exposing participants to mental stress; asking questions that are detrimental to their self-interests; use of tape recorders, videos or health-hazardous equipment; and involving the participants in research without their consent. It is further observed that the use of deception, coercion to obtain

information and possibly depriving participants of their rights are some of the key ethical considerations.

This study ensured that the above-mentioned ethical considerations were addressed before and during the research process. The participants' consent to participate in the study was voluntarily and this was ensured through the use of consent forms. Where consent could not be obtained, the participants' rights not take part in the study were observed accordingly. Such participants did not participate in the study.

The researcher further obtained clearance from the GIPF management to undertake this study on the organisation as well as to conduct interviews with the GIPF staff. The researcher ensured that the personal identification of the participants in the findings and data analysis would be avoided and all responses would be kept anonymous. All participants took part in the study on condition that confidentiality would be maintained. All the information disclosed by respondents was regarded as confidential due to the sensitive nature of the information that was collected and offered in good faith.

3.9 Summary

The chapter examined the research methodology adopted in the study. This chapter examined the research design and the justification of the selection of the quantitative design. The chapter further considered the selection of the population and the related sample from the GIPF staff members. The chapter concluded with a discussion on the research instruments, procedure, data analysis and observation of research ethics.

The next chapter of this study is chapter four. The chapter presents a detailed analysis and discussion of data and the related findings of the study.

CHAPTER FOUR

DATA ANALYSIS AND INTERPRETATION

4.1 Introduction

This chapter focuses on data presentation and a discussion of the findings. The chapter presents data based on the key sections of the research instrument. Section 4.2 presents a description of the research instrument and the procedure adopted by the study. The remainder of the chapter is broken down as follows: 4.3 section A; section B of the questionnaire is covered in paragraph 4.3; paragraph 4.4 is about sub-questions in section B; and paragraphs 4.5 to 4.9 deal with the sub-questions in sections C, D, E, F and G of the questionnaire in the appendix. The chapter concludes with section 4.10 Conclusions.

4.2 Research instrument

4.2.1 Description of the research instrument

A questionnaire was used in the study for data collection. The research instrument had six sections. The questionnaire had 48 short items that required the participants to tick the most appropriate response per item based on the Likert scale. Section A of the questionnaire covered general questions on participants' working experience at the GIPF, departmental information and hierarchical levels. Section B of the questionnaire had 11 items. These items dealt with the overall question on the barriers to an effective implementation of the ABC system. The third section, section C, of the questionnaire had 11 questions. This section dealt with issues concerning the effectiveness of the implementation process. Section D of the questionnaire, which had seven questions, addressed the element of practical issues surrounding the implementation of an ABC system. Section E of the instrument sought to determine

whether there were measures and set requirements for the upgrading of the existing system to a new ABC system. This section had only four items. The last section of the research instrument was section F. This section had six items which compared the traditional costing approach versus ABC and the unique changes thereof.

4.2.2 Procedure

Thirty-eight questionnaires were distributed to the GIPF staff members who constituted the sample of the study. Twenty-seven completed questionnaires were received from the participants. The study therefore achieved a 71% response rate consisting of seven HODs and 20 other employees. Participants for the study were drawn from eight different departments of the GIPF. The respondents were mainly from operations, finance, information systems, human resources, internal audit, marketing and public relations and investments departments.

4.3 Section A Questions

4.3.1 Years of experience

Years of experience were used as a general indicator of exposure to the GIPF operations. The assumption was that those who had served the GIPF for a considerable number of years were in a better position to understand the GIPF processes and projects. The data obtained from the questionnaire, therefore, indicated that the majority of the respondents had working experience of more than five years. The data on length of service at the GIPF is presented in Figure 2. The employees were considered capable of interpreting the questionnaire without any assistance.

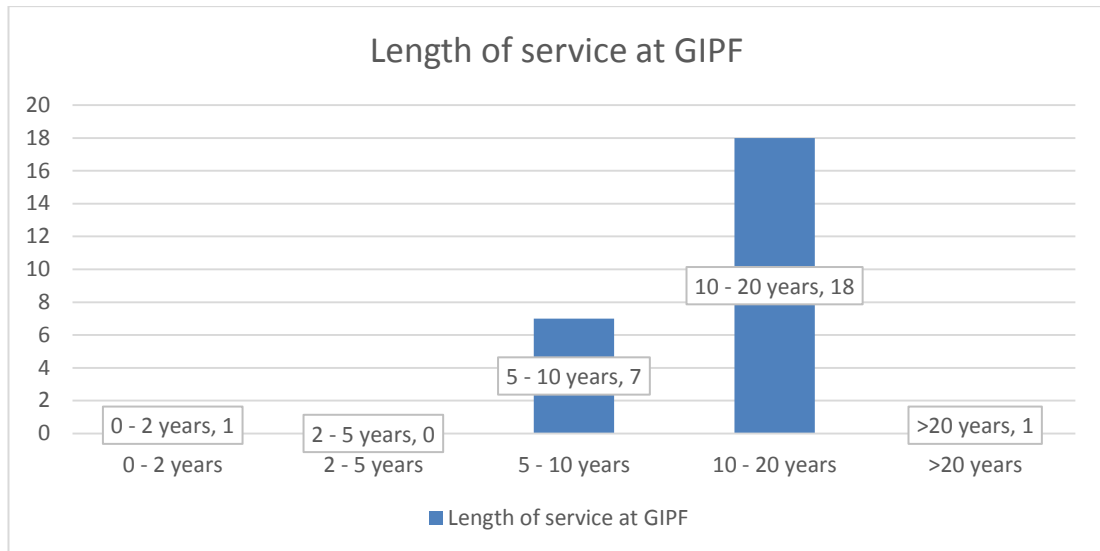


Figure 2: Length of service at the GIPF

4.3.2 Department information

Seven departments were included in the study. In the evaluation of the implementation of ABC, it was considered prudent to include all departments since the adoption of ABC at the GIPF affected all the departments, especially in the area of expenditure control. The participants per department are presented in Figure 3.

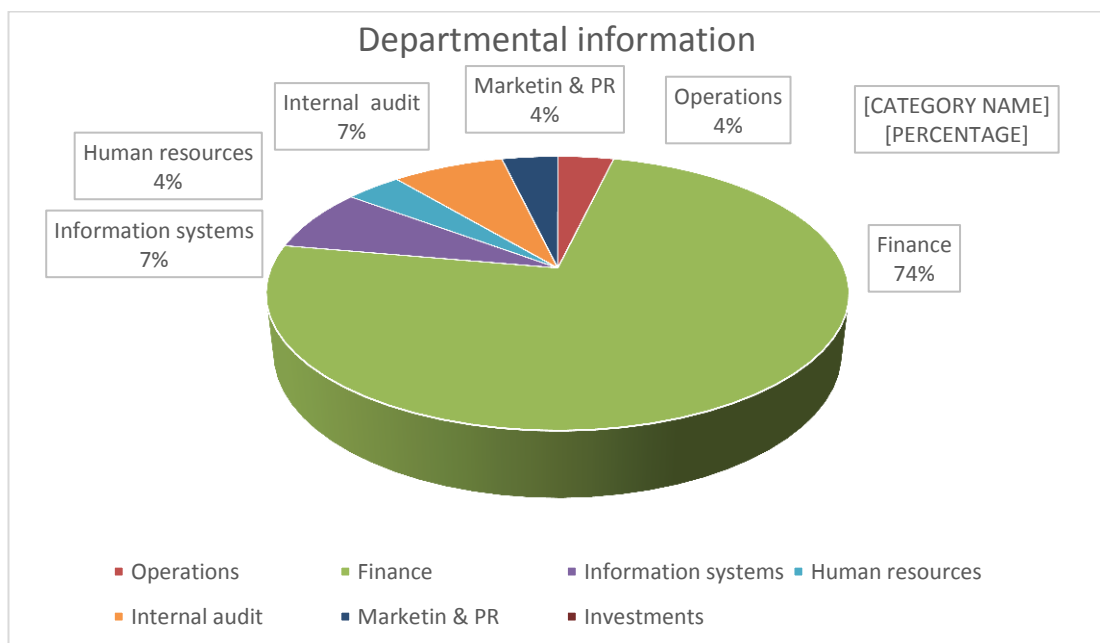


Figure 3: Departmental information

The above chart indicates that all the departments were involved in the study. The implementation of ABC at the GIPF cuts across all the departments. Only the investments department did not respond to the questionnaire.

4.3.3 Hierarchy level of participation

The element of hierarchy level was dealt with in question 3 of section B of the questionnaire. Specific details relating to the number of participants that took part in the study are presented in Figure 4. A higher concentration of participants was in the supervisory ranks.

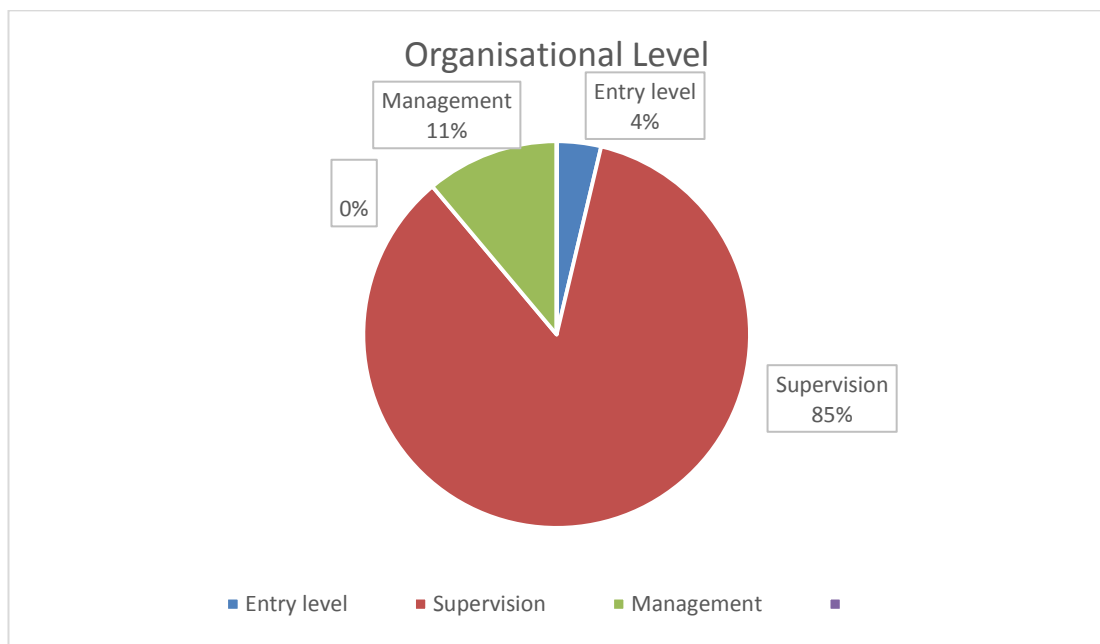


Figure 4: Employment level

The objective of question 3 in section A was aimed at improving the reliability of the study. The results in the figure above indicate that 85% of the respondents have supervisory roles, while 11% were at management levels. Only 4% of the respondents were at the entry-level position. From the above distribution of

respondents, coupled with their years of experience in paragraph 4.3.1 above, it can be assumed that the sample consisted of respondents who were familiar with the operations of the GIPF, hence they were in a position to offer responses to the questionnaire.

4.4 Perceived barriers impeding the adoption of ABC

Section B of the questionnaire was designed to address issues related to perceived barriers in the adoption of an ABC system. The section had eleven short questions with a Likert scale rating of 1 to 5, where 1 represents “strongly disagree” and 5 indicates “strongly agree”. The respondents were only required to tick what they considered the most appropriate rating for each question. The objective of the question was to extract what the respondents may have considered as barriers for the implementation of an ABC system at the GIPF.

4.4.1 High cost of implementation

The objective of question 1 in section B was to determine whether respondents considered the issue of high implementation costs as a barrier to implementing ABC at the GIPF. The data on question 1 is presented in Figure 5 below.

It is clear from Figure 5 that the overwhelming majority of respondents (87%) disagree that high implementation costs are a barrier for implementing ABC.

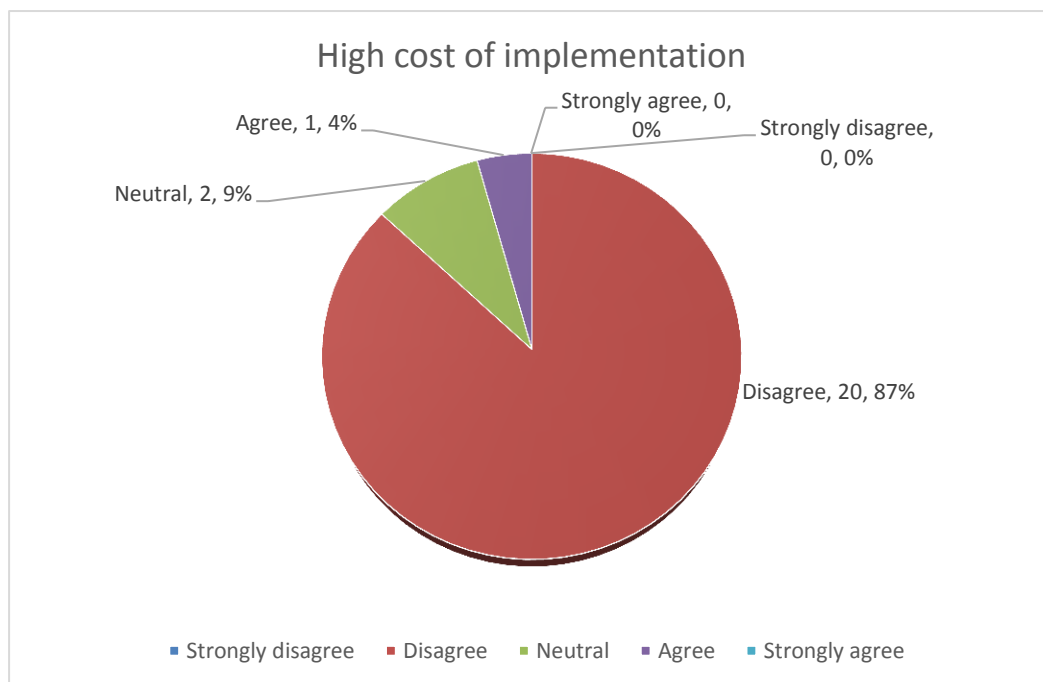


Figure 5: High cost of implementation

4.4.2 Resistance to change

The issue of resistance was covered by question 2 in section B of the questionnaire. The objective of the question was to identify whether resistance to change was one of the barriers of ABC implementation at the GIPF.

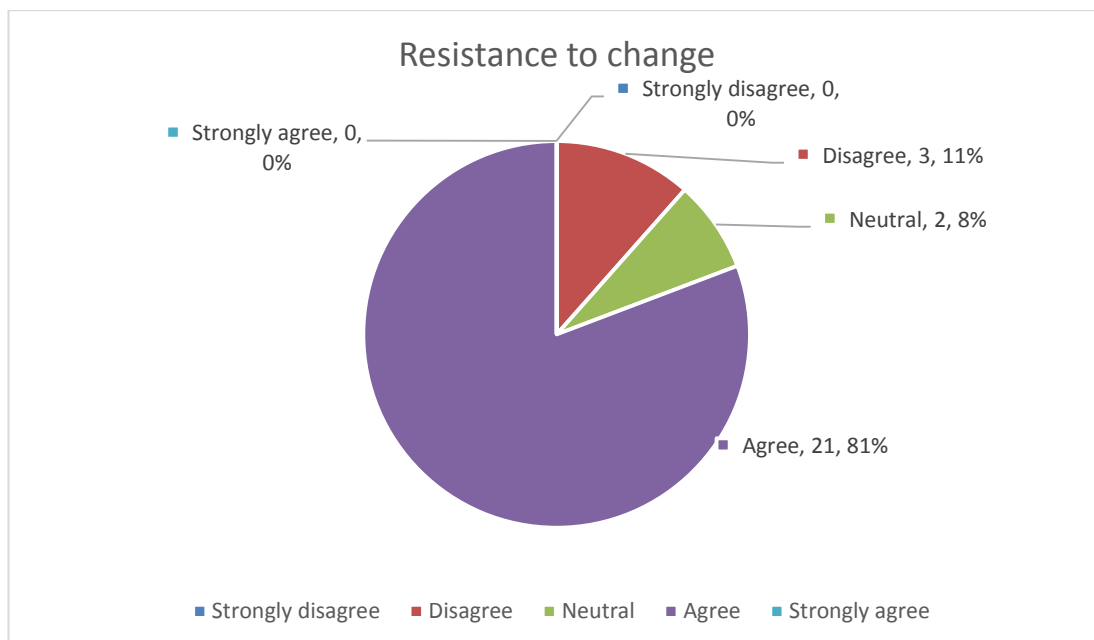


Figure 6: Resistance to change

Twenty-six of 27 respondents answered this question; consequently, one (4%) did not answer the question. Twenty-one respondents (78%) indicated that they were in agreement with the fact that resistance to change was a barrier, two respondents (11%) were neutral, while three respondents (7%) disagreed. The results, therefore, indicate that 21 respondents (78%) considered resistance to change was a barrier to the implementation of an ABC system at the GIPF.

4.4.3 Involves a great deal of work

The issue of whether implementation of ABC is involved and, therefore, creates a barrier to ABC implementation was dealt with in terms of question 3 in section B of the questionnaire. The question received a 93% response rate. The distribution of responses is indicated in the figure below.

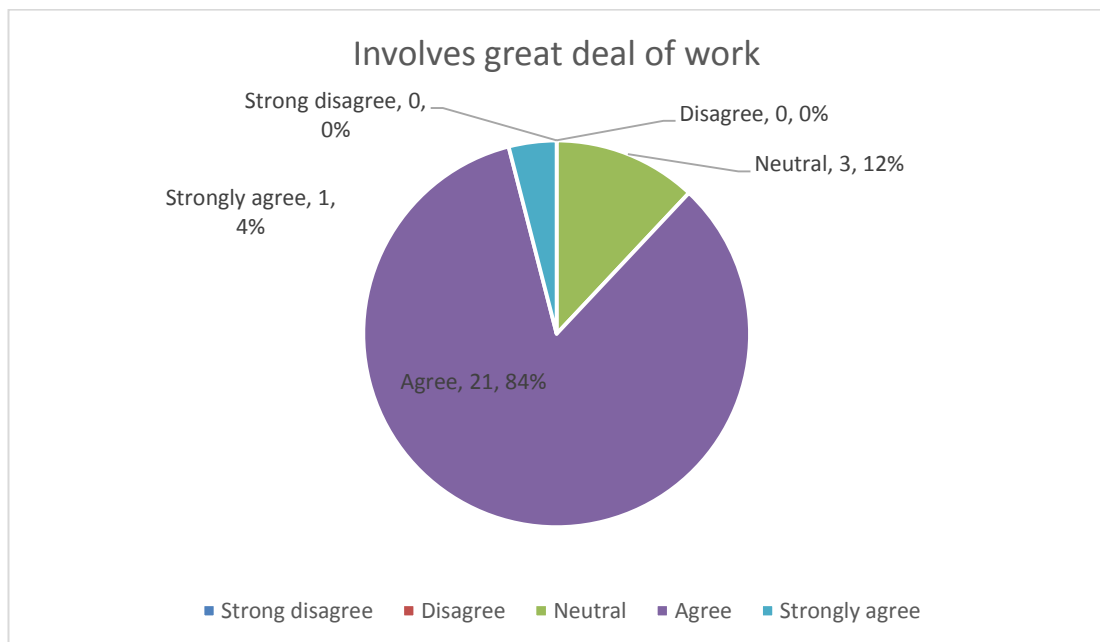


Figure 7: Involves great deal of work

Three respondents (12%) chose to remain neutral. Twenty-one respondents (84%) indicated that implementation of ABC was quite involved. However, only one

respondent (2%) indicated that he or she strongly agreed that the implementation of ABC involved a lot of work; hence, the amount of work involved in implementation acts as a barrier to the implementation of ABC. The study, therefore, found that the implementation of ABC at the GIPF was quite involved and required a great deal of work.

4.4.4 Time-consuming

Question 4 was designed as part of section B to extract information to determine whether the implementation of ABC was time-consuming or not. The results are presented in Figure 8.

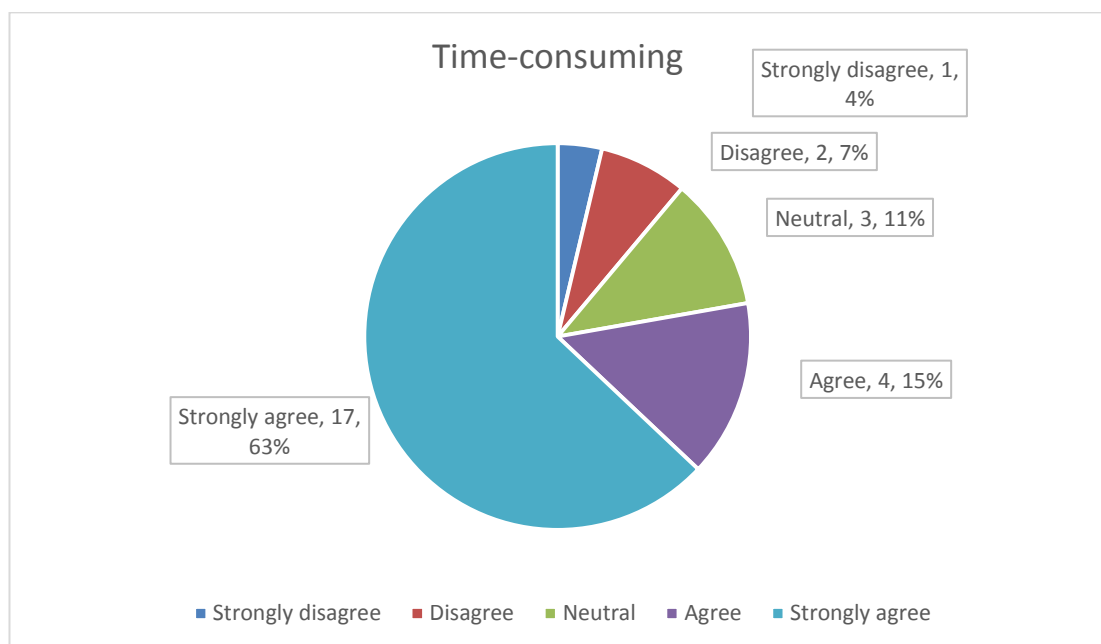


Figure 8: Time consuming

The objective of the question was to determine whether the implementation was considered as time-consuming. Twenty-five respondents answered the question, thereby achieving a 93% response rate. Three respondents (11%) remained neutral, while one respondent (4%) strongly disagreed and 2 (8%) disagreed. Four

respondents (15%) agreed that ABC implementation was time-consuming, while 17 respondents (63%) strongly agreed. The study, therefore, established that the implementation of ABC was found to be time-consuming.

4.4.5 Lack of top management support

Question 5 in section B of the questionnaire was designed to determine whether the lack of management support had an impact on the adoption and implementation of ABC at the GIPF. The results are presented in the Figure 9 below.

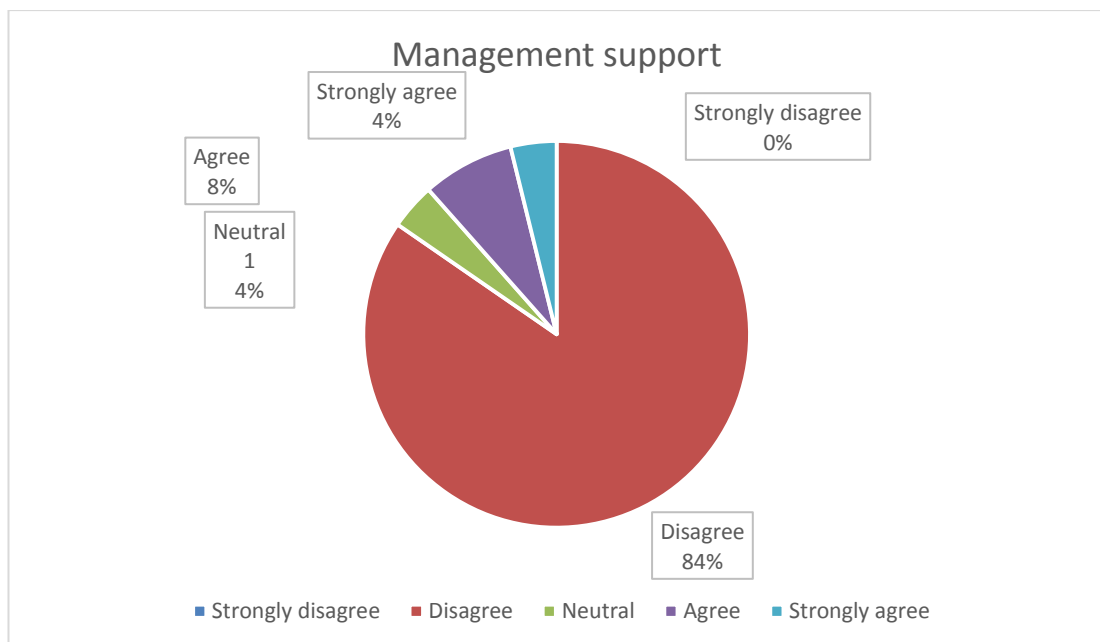


Figure 9: Lack of top management support

Twenty-six respondents answered this question. This represented a 96% response rate. Twenty-two respondents (84%) disagreed with the notion. One respondent (4%) chose to be neutral. However, two respondents (8%) agreed with the notion, while one respondent (4%) indicated to be strongly in agreement. The results, therefore, indicate that lack of management was not a barrier to the adoption and implementation of ABC system at the GIPF.

4.4.6 Lack of cooperation between departments

The questionnaire had a question that was designed to collect data on whether any lack of cooperation between departments was a barrier in the implementation process of ABC. This element was covered in question 6 in section B of the questionnaire. The distribution of responses is presented in Figure 10 below.

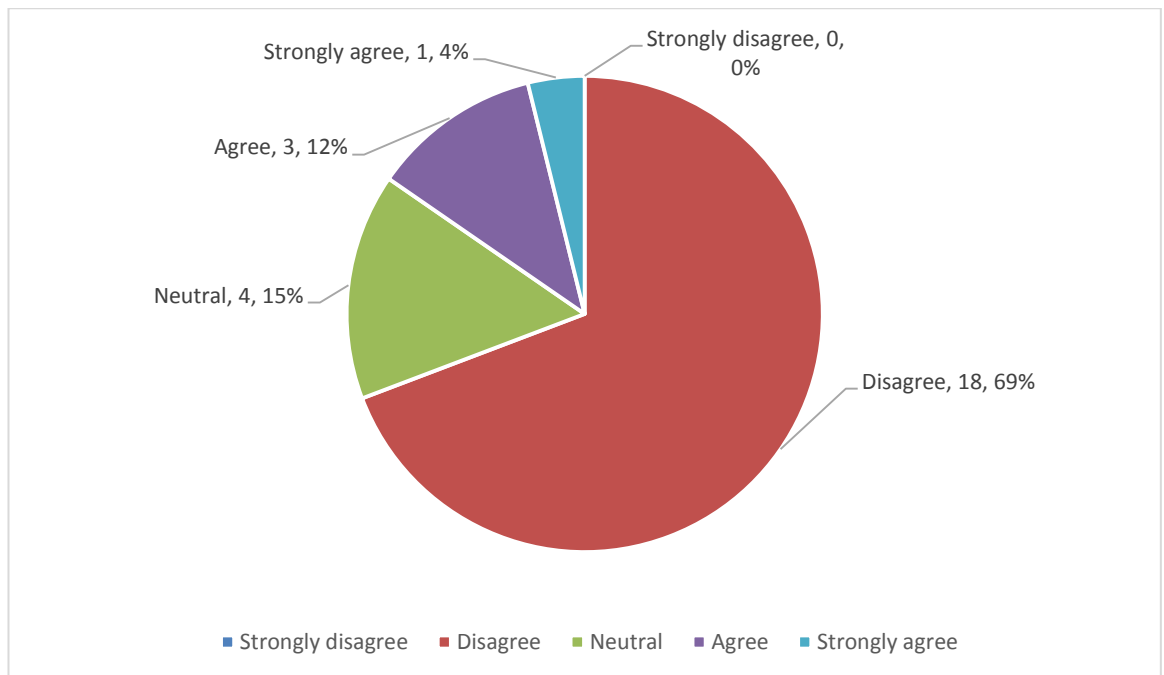


Figure 10: Lack of cooperation between departments

The above figure shows a response rate of 96%. A total number of 26 participants answered the question. Eighteen respondents (69%) disagreed, four respondents (15%) were neutral and three respondents (12%) were in agreement with the notion. Only one respondent (4%) strongly agreed with the notion. One participant chose not to answer the question. The study, therefore, found that the lack of cooperation and commitment did not hinder the adoption and implementation of ABC at the GIPF.

4.4.7 Lack of knowledge of ABC

Question 7 in section B sought to determine whether a lack of ABC knowledge was a barrier to the implementation process of ABC at the GIPF. The distribution of responses to this question is presented in Figure 11 below.

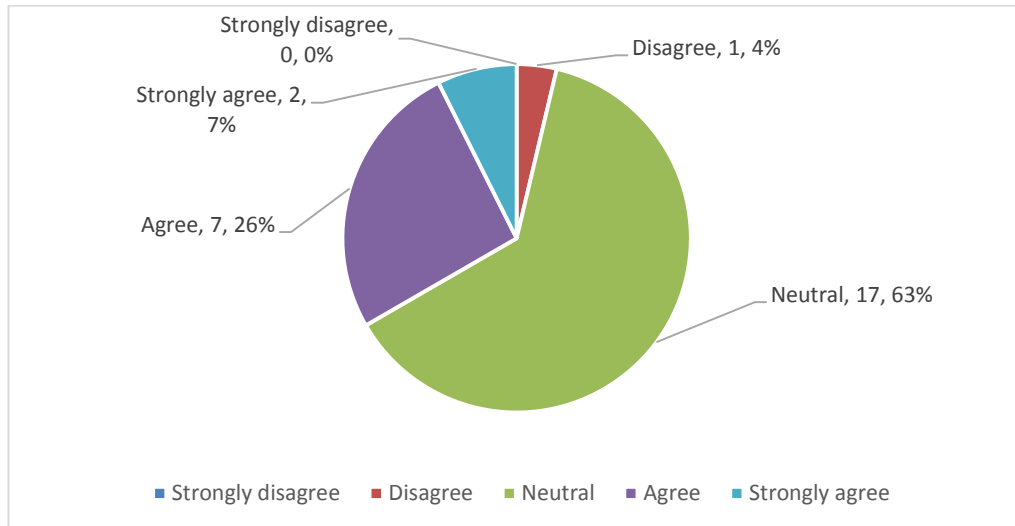


Figure 11: Lack of knowledge of ABC

This question received a 100% response rate. All 27 participants responded to this question. One respondent (4%) disagreed, 17 respondents (63%) were neutral, seven respondents (26%) agreed and two respondents (8%) strongly agreed. The majority of the respondents thus chose to remain neutral. The study did not, therefore, find conclusive evidence to establish whether a lack of ABC knowledge was an implementation barrier.

4.4.8 Problems in identifying cost drivers

One of the challenges that most organisations face in the adoption of an ABC system has always been the ability to identify cost drivers. It is against this background that question 8 in section B of the questionnaire was designed to determine whether the

GIPF had similar challenges. The specific responses are presented in Figure 12 below.

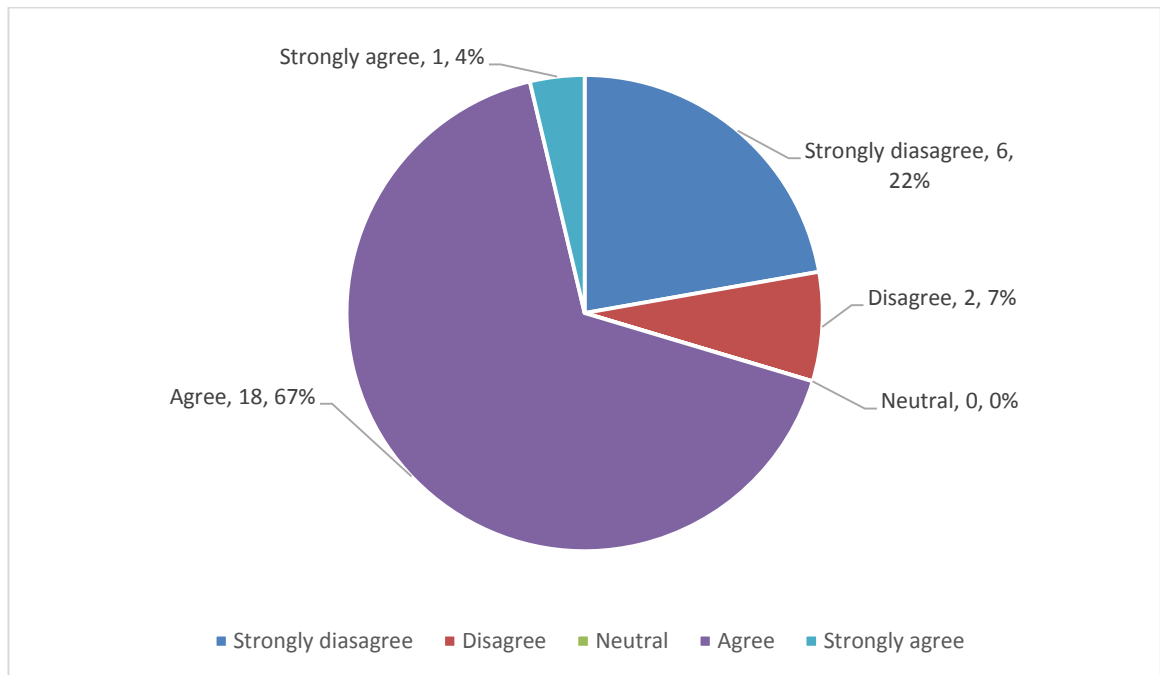


Figure 12: Identification of cost drivers

The figure above shows that a total number of 21 respondents answered the question. The question achieved a 77% response rate. Two respondents (8%) disagreed, 18 respondents (67%) were in agreement, while two respondents (4%) strongly agreed that there were challenges in the implementation of ABC system at the GIPF. The findings of the study is that the identification of cost drivers was a barrier to implementation of an ABC system at the GIPF.

4.4.9 Problems in identifying activities

Identification of activities in an ABC system is considered as one of the key barriers to the adoption of the system. Data on this element was obtained by question 9 in section B of the questionnaire. The data is presented in Figure 13 below.

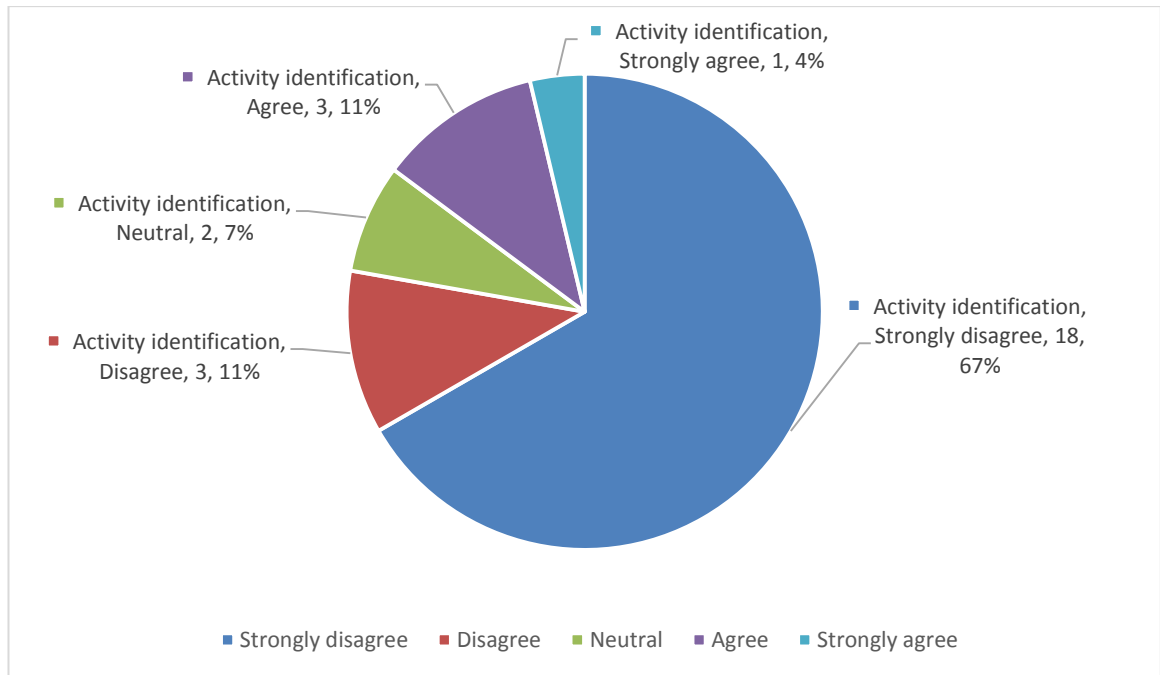


Figure 13: Identification of activities

The question received a 100% response rate. All 27 participants answered the question. Eighteen respondents (67%) strongly disagreed, three respondents (11%) disagreed, two respondents (7%) were neutral, three respondents (11%) agreed and only one respondent (4%) strongly agreed. The results presented above indicate that a total of 78% disagreed that there were challenges in identifying activities. Only 15% of the respondents were in agreement that there were challenges in the identification of activities. The findings of the study is that the identification of activities was not a barrier to ABC implementation.

4.4.10 High costs of external consultants

The objective of question 10 in section B of the research instrument was to determine whether the costs of consultations prohibited effective implementation. The specific responses are presented in Figure 14 below.

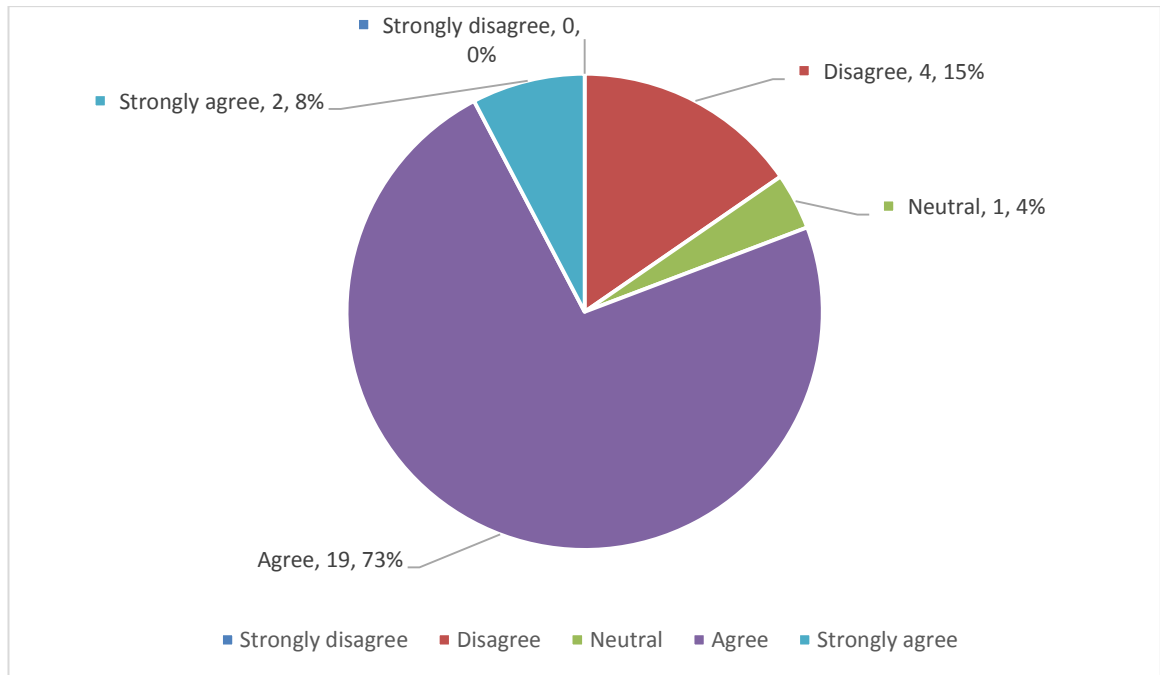


Figure 14: High costs of external consultants

The results presented in the figure above show that 26 respondents answered question 10 in section B. The results represent a 96% response rate for the question. There were no respondents who strongly disagreed. However, four participants (15%) disagreed, one respondent (4%) was neutral, 19 respondents (73%) agreed, while two participants (8%) strongly agreed that the high costs of consultations were a barrier to the implementation of ABC at the GIPF. Only one participant chose not to respond to this question. Eighty-one percent of the respondents indicated that the high cost of consultation fees were a barrier to implementation of ABC by the GIPF. The study's finding is that the high costs of consultations were a barrier to effective implementation.

4.4.11 A higher priority of other changes or projects

It has been suggested that in some cases, higher priority of other changes or the implementation of other projects does affect the implementation of ABC by an

organisation. Question 11 of the questionnaire sought to determine whether the GIPF was impacted by allocating a higher priority ven to other projects. The data related to this question is presented in Figure 15 below.

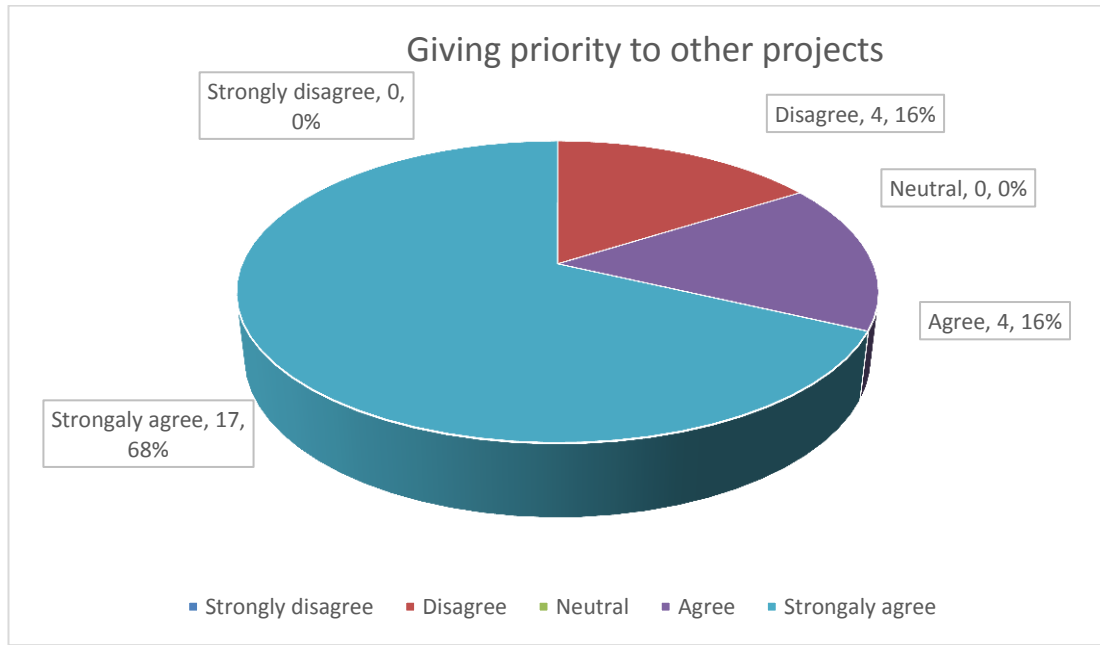


Figure 15: Higher priority of other changes or projects

The question received a 93% response rate. Twenty-five participants answered the question. The above figure shows that there were no respondents who disagreed with the notion that higher priority given to other changes or projects does distract the implementation of an ABC system. Twenty-one participants indicated that the issue of giving priority to other projects affected the implementation of ABC at the GIPF. Four of the respondents (16%) agreed, while 17 of the respondents (68%) strongly agreed. Only four respondents (16%) disagreed. The results, therefore, show that 84% of the respondents indicated that giving priority to other projects affected the implementation of ABC at the GIPF.

4.5 Section C: Effective implementation

This section of the questionnaire was intended to obtain information from the participants on whether the implementation of ABC at the GIPF can be regarded as effective or ineffective. Section C of the instrument had 11 short questions based on the Likert scale rating. While the number of participants per question may differ, it was observed that the respondents attempted to at least answer all the questions.

4.5.1 Accurate cost allocation to activities/functions

The broader theme of section C was to determine whether the implementation of ABC was effective. The objective of question 1 in section C of the questionnaire was to determine whether the implementation of ABC at the GIPF resulted in an accurate allocation of costs to respective functions or organisational activities or not. The results of this question are presented in Figure 16 below.

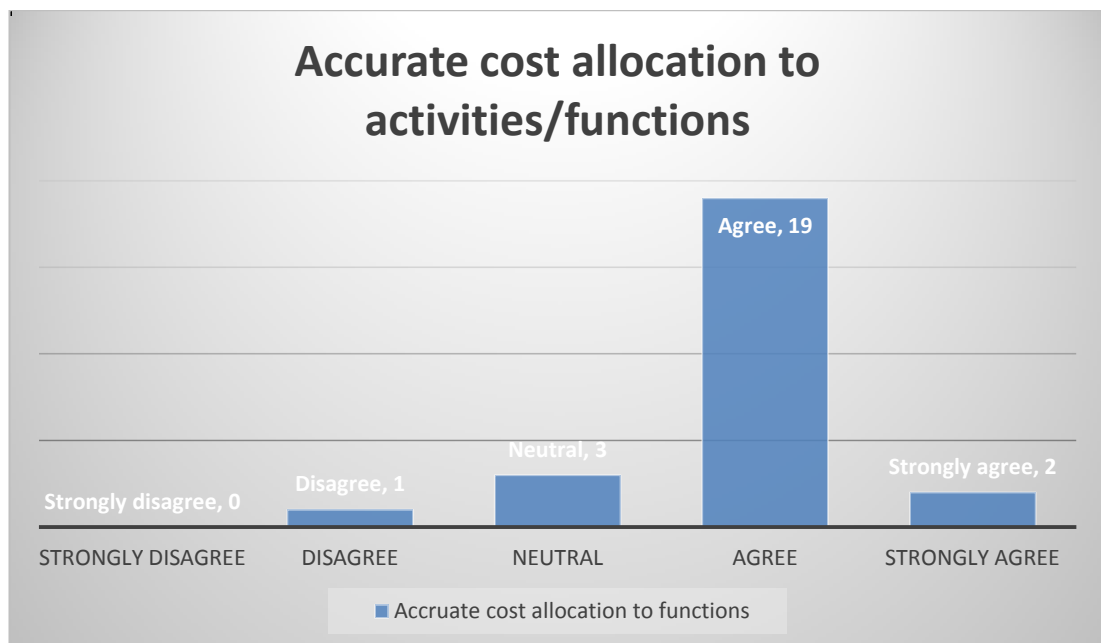


Figure 16: Accurate cost allocation to activities/functions

The question received a 93% response rate. Twenty-five respondents answered the questionnaire. One respondent disagreed (4%), three were neutral (12%), while 19 participants (76%) agreed that ABC allocates costs accurately. Two respondents (8%) strongly agreed that the ABC system allocates costs accurately.

4.5.2 Cost reduction

The objective of an ABC system in a manufacturing or service organisation is to reduce costs per unit produced or service provided. The objective of question 2 in section C of the questionnaire was to determine whether the implementation of an ABC system resulted in cost savings per service rendered to pension fund members.

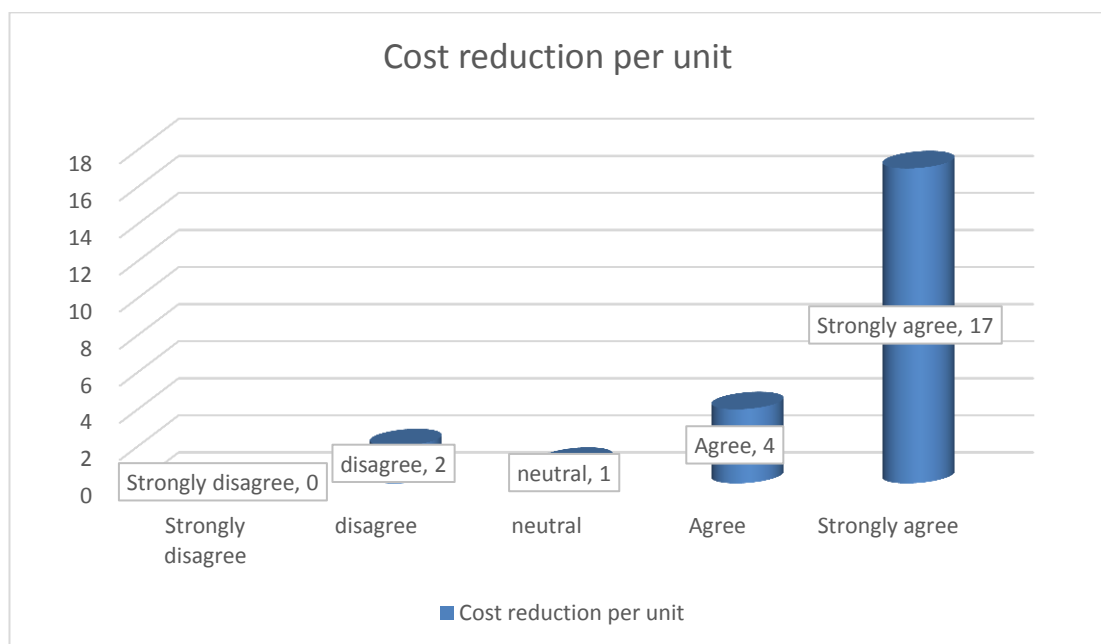


Figure 17: Reduction of costs per unit

The question received 24 responses. This represents an 89% response rate. Two participants (8%) disagreed with the notion of cost reduction, one was neutral (4%), while 17 participants (71%) strongly agreed that ABC resulted in cost reduction. In addition, four participants (16 %) agreed that the implementation of ABC resulted in

a cost reduction per unit or service offered. The finding of the study is that the implementation of ABC at the GIPF resulted in a cost reduction per unit.

4.5.3 Improved performance measurement

The objective of question 3 in section C was to determine whether the implementation of ABC resulted in an improved performance measurement. An effectively implemented ABC system should result in an improved performance measurement system.

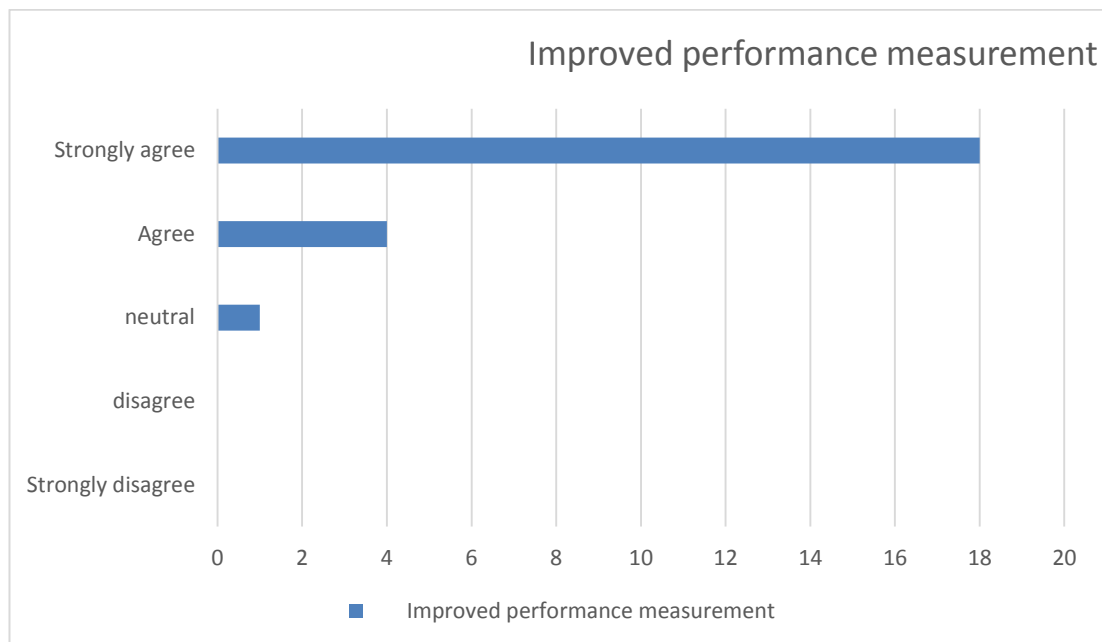


Figure 18: Improved performance measurement

Twenty-three responses were received for this question. The question, therefore, received an 85% response rate. There were no participants who disagreed or strongly disagreed. One respondent (4%) was neutral. Four participants (18%) agreed, while 18 respondents (78%) strongly agreed. The results presented in Figure 19 indicate that 96% of the participants agreed that the implementation of the ABC system at the

GIPF resulted in improved performance measurement. The finding of the study is that the adoption of ABC resulted in improved performance measurement.

4.5.4 Cost reduction efforts

The objective of question 4 in section C was to determine whether effective ABC implementation was complementing the GIPF's efforts to reduce costs. Twenty-three participants answered the question. The results are presented in Figure 19 below.

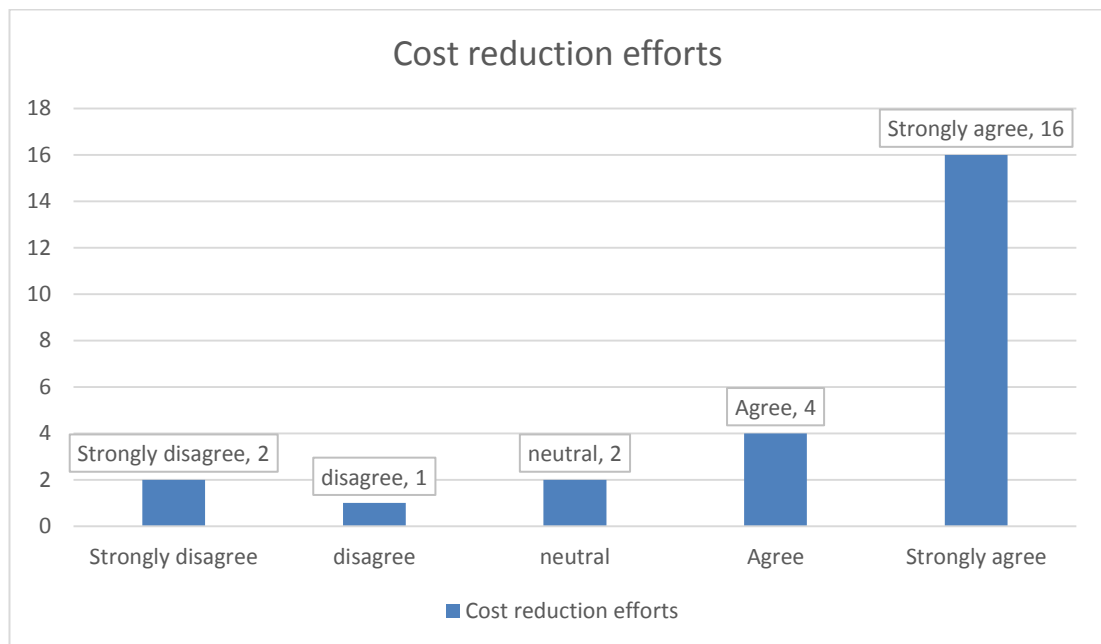


Figure 19: Cost reduction efforts

The above figure shows that 25 participants answered the question. This, therefore, represents an 85% response rate. There was one participant (4%) who disagreed with the fact that ABC supports cost reduction efforts. Two participants (8%) disagreed, two (8%) were neutral, four participants (16%) agreed, while 16 participants (64%) strongly agreed. The results show that 80% of the participants agreed that the implementation of an ABC system resulted in cost reduction efforts.

4.5.5 Better decision-making and execution

An effective ABC system would aid decision-making and execution as it supports the process through the provision of cost information. Question 5 in section C sought to determine whether the implementation of an ABC system improved decision-making and the execution process. The results of this question are presented in Figure 20 below.

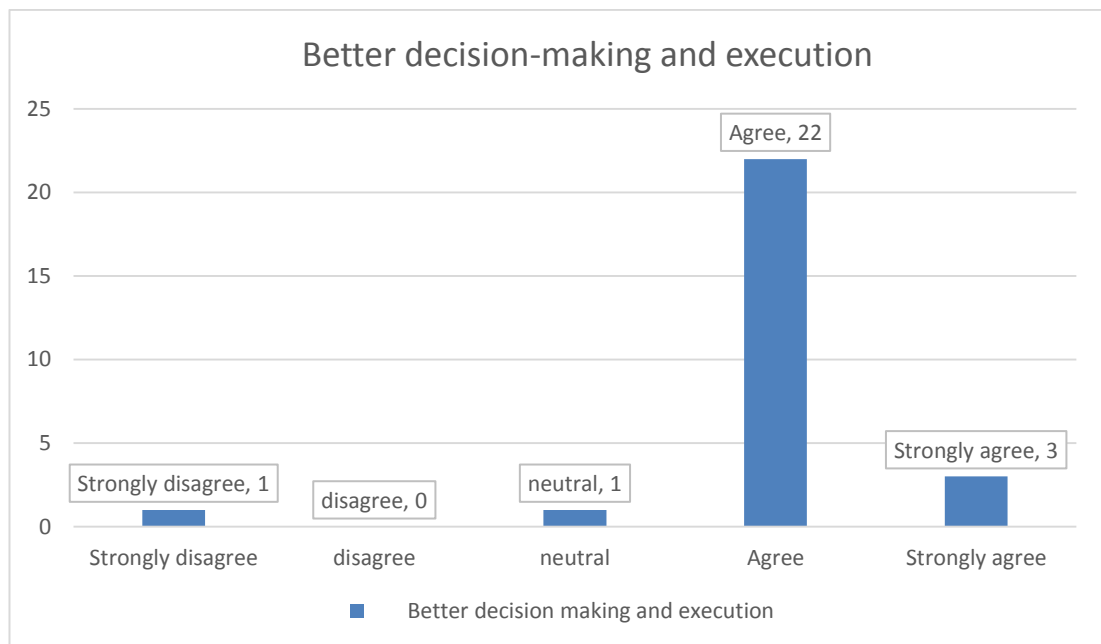


Figure 20 Better decision-making and execution

Twenty-six participants answered the question. A response rate of 96% was thus achieved. There were no participants who disagreed and one (4%) who strongly disagreed. One participant (4%) remained neutral, twenty-two participants (85%) agreed that ABC results in better decision-making and execution, while three (12%) strongly agreed. The results in the above figure show that 87% of the participants agreed that the introduction of an ABC system at the GIPF led to better decision-making and execution.

4.5.6 Personal evaluation by respondents

Question 6 in this section sought direct opinions of the respondents on the effectiveness of ABC. The question received 24 responses. The results of the responses are illustrated in Figure 21 below.

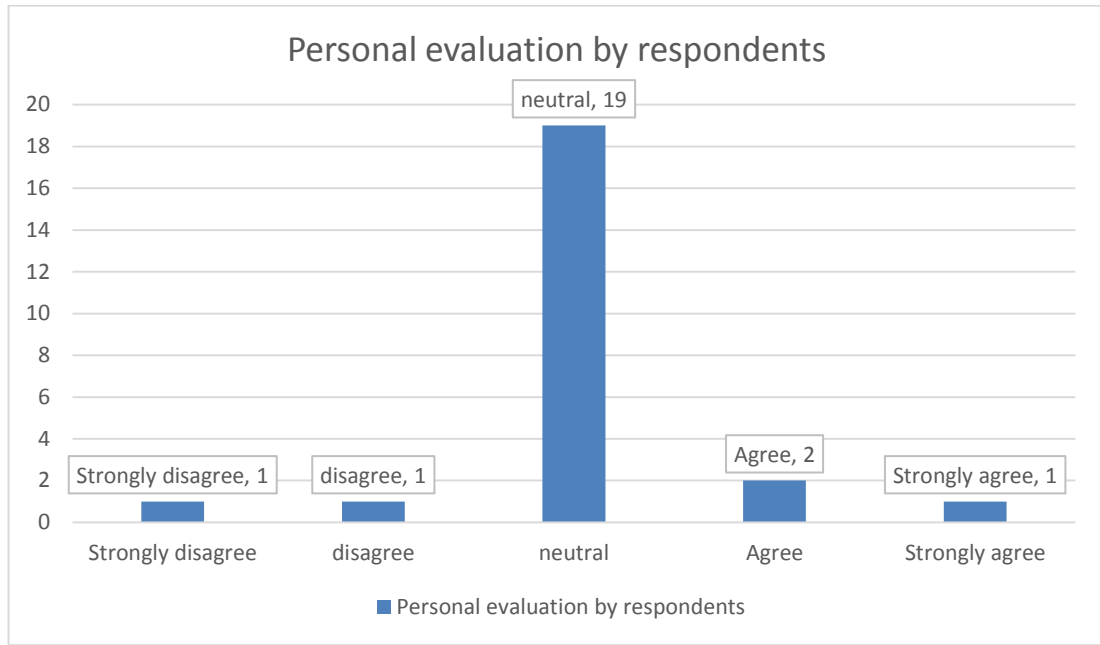


Figure 21: Personal evaluation by respondents

Twenty-four participants answered the question. This represents a 93% response rate. One respondent (4%) strongly disagreed, one respondent (4%) disagreed and 19 respondents (79%) remained neutral. Two participants (8%) agreed, while one participant (4%) strongly agreed that the GIPF implemented the ABC system effectively. Based on the above data, the study cannot be conclusive on the findings of this question. The reason for this is probably that the question, whether ABC was implemented effectively, was too wide and forced the respondents to remain neutral on this question.

4.5.7 Increases internal customer satisfaction

One of the objectives of ABC is fair cost allocation as discussed in sections 2.2.3.3 and 2.4. Question 7 in section C of the questionnaire sought to gather information on customer satisfaction. The question received 23 responses. The results are presented in Figure 22 below.

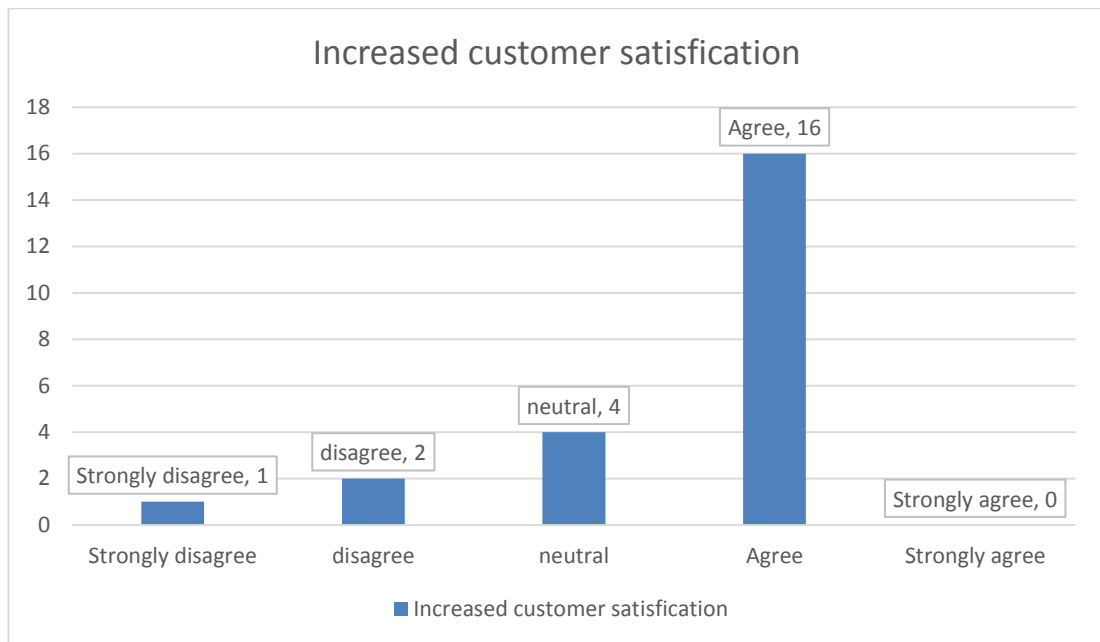


Figure 22: Increased customer satisfaction

The above figure indicates that there were no participants who strongly agreed with the notion of internal customer satisfaction. One respondent (4%) strongly disagreed, two respondents (8%) disagreed and four respondents (17%) were neutral. A total of 16 respondents (70%) agreed that there was an improvement in internal customer satisfaction. The study, therefore, concludes that the implementation of ABC leads to increased customer satisfaction.

4.5.8 Elimination of waste by providing visibility on non-value-added activities

It is often argued that an effectively implemented ABC system should be able to identify non-value-added activities with a view to reducing waste. This element was the objective of question 8 in section C. The results are presented in Figure 23 below.

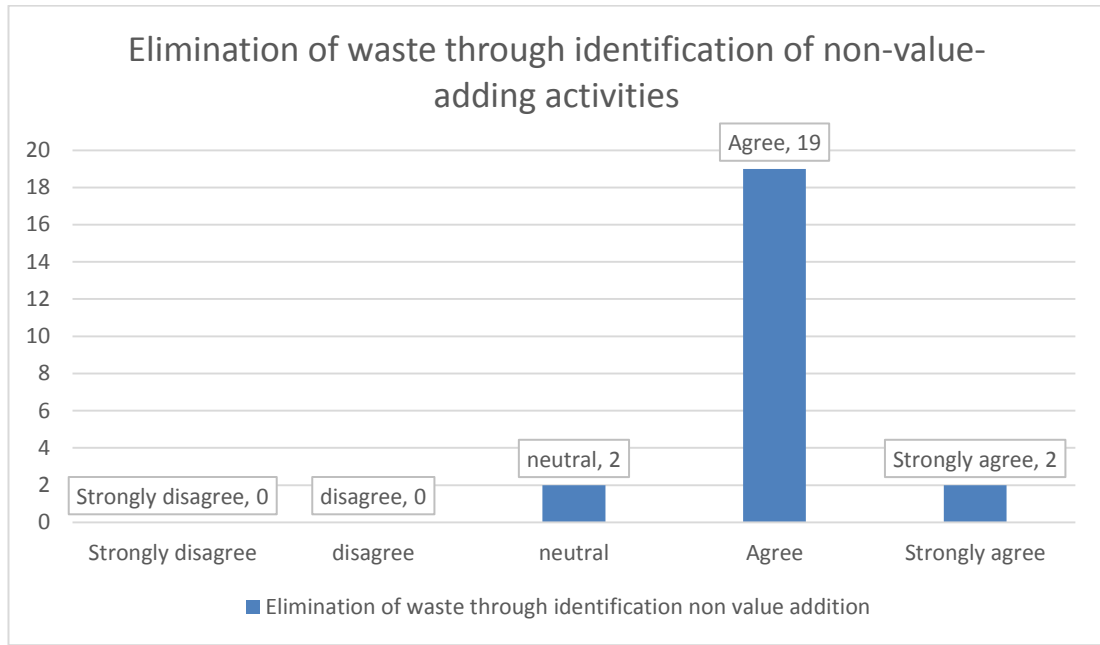


Figure 23: Elimination of waste through identification of non-value-adding activities

Twenty-three respondents answered the question. This represents an 85% response rate. There were no participants who disagreed or strongly disagreed. Two participants (9%) remained neutral, 19 respondents (82%) agreed, while two respondents (9%) strongly agreed that ABC resulted in the elimination of waste through the identification of non-value-adding activities. The results, therefore, indicate that 91% of the respondents agreed that the implementation of ABC at the GIPF led to the elimination of waste through the identification of non-value-adding activities. The finding of the study is that ABC leads to the elimination of waste by identifying non-value-adding activities.

4.5.9 Success of the GIPF ABC initiative

Respondents were given an opportunity to assess the overall success of ABC at the GIPF. Twenty-six participants answered question 9 in section C of the questionnaire.

The results are presented in Figure 24 below.

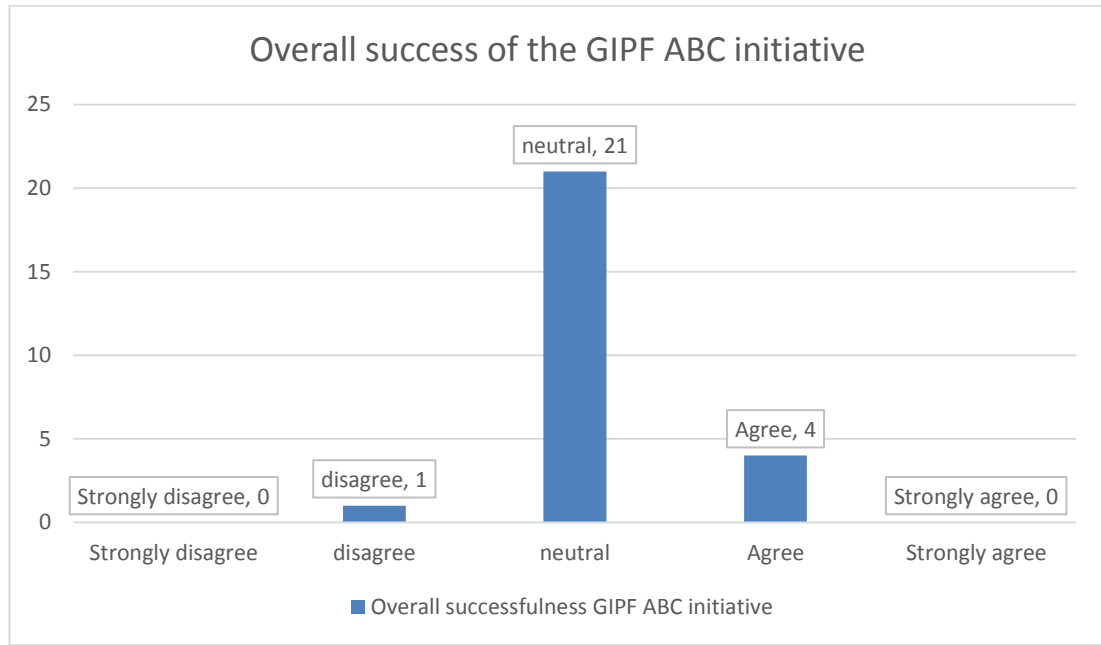


Figure 24: Overall success of the GIPF ABC initiative

A total of 26 participants answered the question. This represents a 96% response rate. There were no participants who either strongly agreed or strongly disagreed. One participant (4%) disagreed, 21 participants (81%) remained neutral, while four participants (15%) agreed that the GIPF successfully implemented the ABC system. With an 81% neutrality rate, the response does not give conclusive evidence that the GIPF successfully implemented the ABC system.

4.5.10 Budgetary control

The ABC system has been praised for its contribution to budgetary or cost control. The objective of question 10 was to determine whether ABC resulted in better

budgetary cost control. Twenty-five respondents answered the question. The results are presented in Figure 25 below.

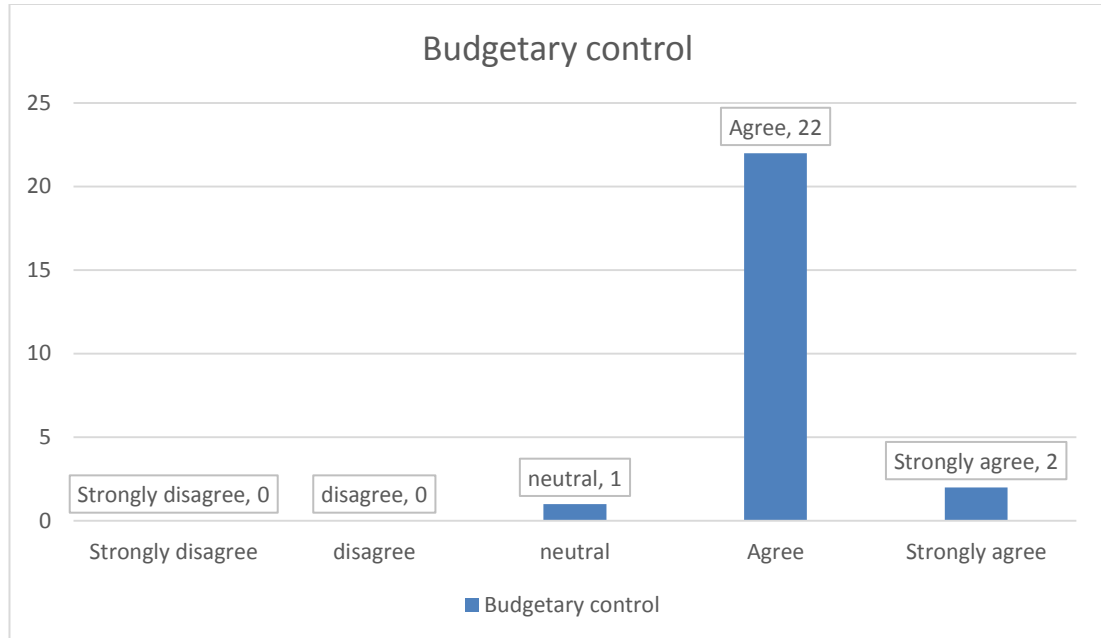


Figure 25: Budgetary control

The question received a 96% response rate. There were no participants who disagreed or strongly disagreed with the impact of an ABC system on budgetary and cost control. One respondent (3.7%) was neutral; however, 22 respondents (81.48%) agreed, with two respondents (7.4%) strongly agreeing. The finding of the study is that the adoption of an ABC system led to an improved budgetary control system.

4.5.11 ABC effectively improved the GIPF budgeting process

Question 11 in section C was the last question examining whether the GIPF effectively implemented the ABC system. The objective of the question was to assess whether the ABC had met its objective of aiding the budgeting process. The results of this question are presented in Figure 26 below.

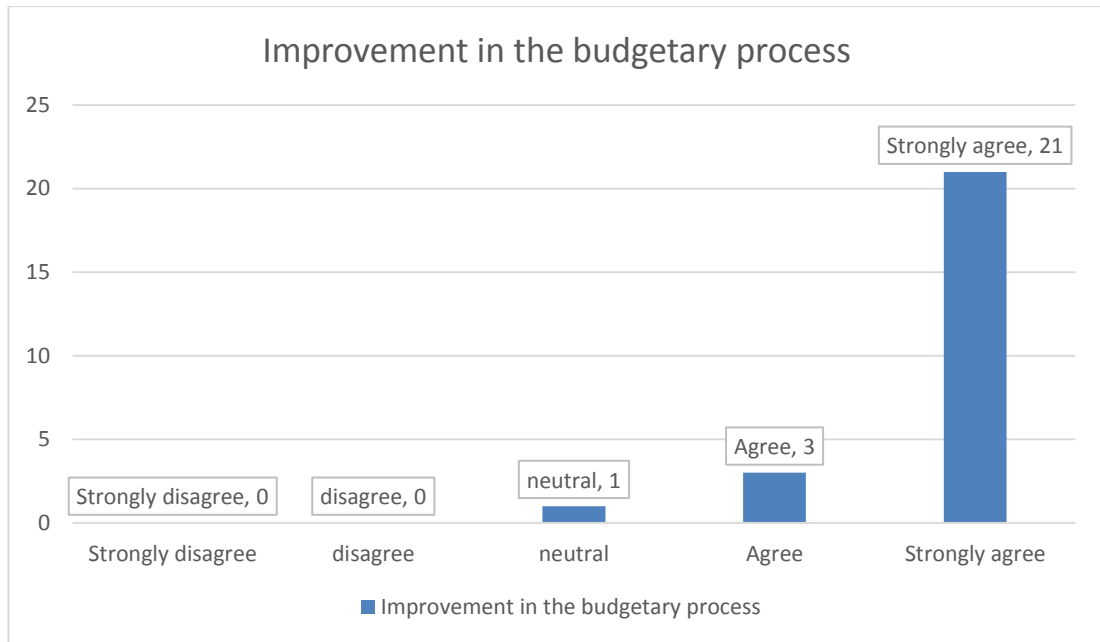


Figure 26: Improvement in the budgetary process

The above figure shows that 25 participants answered question 11 in section C of the research instrument. The question, therefore, achieved a response rate of 93%. There were no participants who disagreed or strongly disagreed. One participant (4%) remained neutral, three participants (12%) agreed, while 21 participants (84%) strongly agreed that there was improvement in the budgetary process. The above results show that 88% of the respondents indicated that the implementation of ABC was effective in improving the GIPF budgetary process. The study, therefore, confirms that the implementation of ABC improves the budgetary process.

4.6 Experiences regarding practical issues of ABC

Section D of the questionnaire comprised seven questions. The responses to these questions were based on a Likert scale of evaluation. Responses to these questions are presented in the following paragraphs. The responses to these questions are also presented in paragraphs 4.6.1 to 4.6.7 below.

4.6.1 Provision of adequate resources by top management

The objective of question 1 was to verify the experiences of the employees on whether management had provided resources to support the implementation of an ABC system at the GIPF. The respondents evaluated the question on a scale of 1 to 5. Twenty-five respondents answered question 1 in section D of the questionnaire. The question achieved a 93% response rate. Figure 27 below presents the findings of the study.

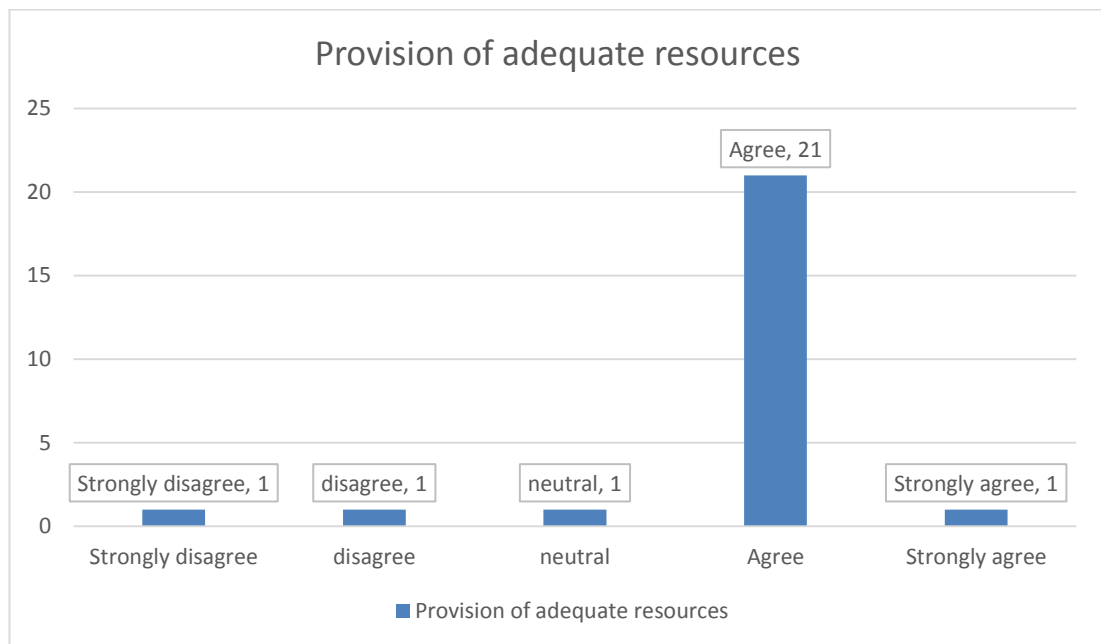


Figure 27: Provision of adequate resources

A total of 21 respondents (84%) indicated that they were in agreement that management had provided adequate resources for the implementation of ABC. Only one respondent (4%) disagreed, while another respondent strongly disagreed. One respondent (4%) chose to be neutral. One respondent (4%), however, strongly agreed. The finding of the study is that the provision of adequate resources was ranked high, which indicates that management did provide adequate resources to support the implementation of the ABC system.

4.6.2 Linking of ABC to the GIPF competitive strategies

Question 2 in section D requested participants to evaluate the logic between competitive strategies with the prevailing strategies. The objective of the question was to determine whether there was a link between ABC and the GIPF's competitive strategies. The data analysis is presented in Figure 28 below.

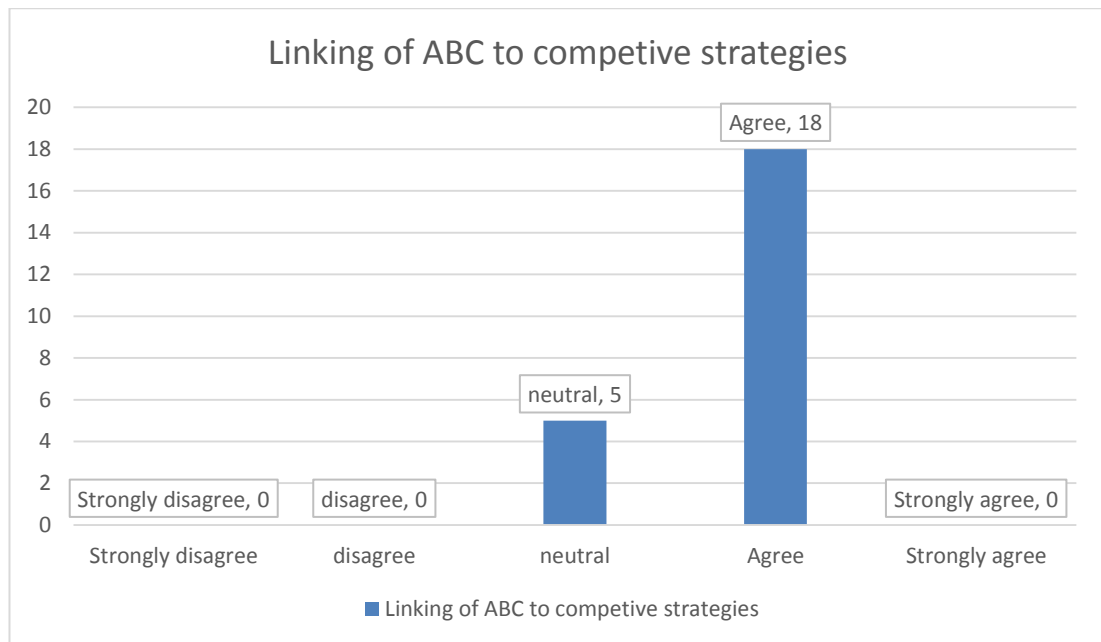


Figure 28: Linking of ABC to competitive strategies

Twenty-three respondents answered the question; the question thus achieved an 85% response rate. None of the respondents strongly disagreed, disagreed or strongly agreed. However, 18 respondents (78%) agreed, while five respondents (22%) remained neutral. The finding of the study is that the GIPF managed to link the objectives of ABC to its strategies.

4.6.3 Consensus with ABC objectives and aims

Question 3 in section D of the questionnaire requested the respondents to evaluate whether there was consensus with the aims and objectives of ABC. Twenty-four respondents answered the question, thereby achieving an 88% response rate.

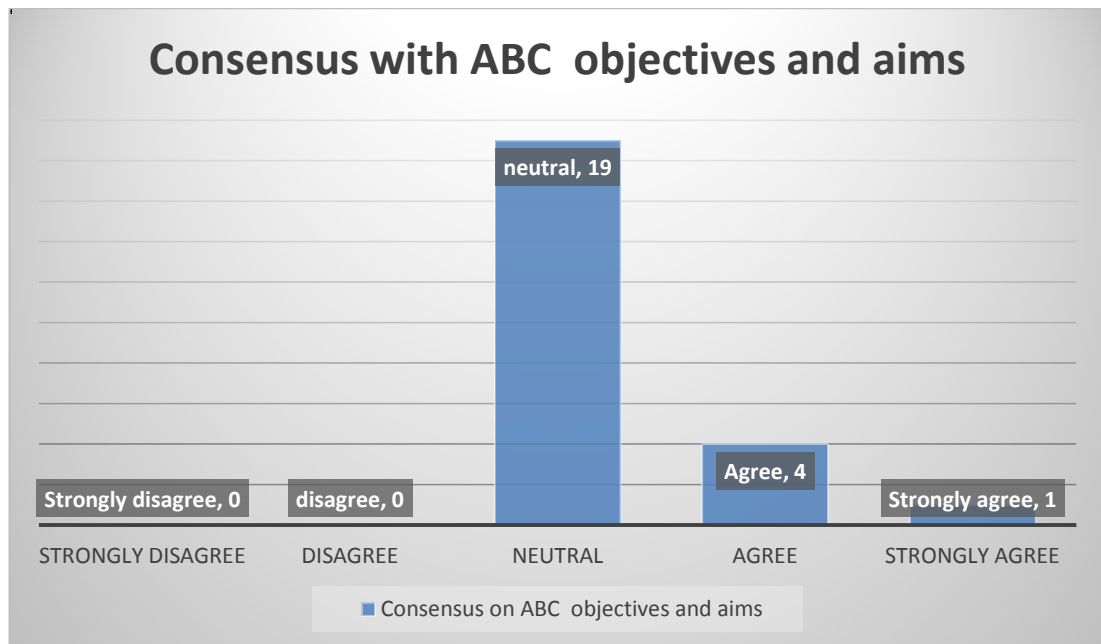


Figure 29: Consensus with ABC objectives and aims

The most significant highlight of the question was that 19 respondents (79%) chose to remain neutral. Only four respondents (17%) agreed that there was consensus with the aims and objectives of ABC. One participant (4%) strongly believed that there was consensus with the objectives and aims of the ABC system. The results, therefore, indicate that 21% of the participants concurred that there was consensus with the objectives of the ABC system at the GIPF. However, a larger percentage (79%) decided to remain neutral. The finding is that the study cannot be conclusive that there was consensus with the aims and objectives of ABC.

4.6.4 Implementation purpose and objectives of ABC

Question 4 in section D of the questionnaire requested respondents to evaluate whether the purpose and objectives of implementing ABC were clearly outlined and understood by the designers and users of the ABC system at the GIPF. The question received 26 responses, thereby achieving a response rate of 96%. The data analysis is presented in Figure 30.

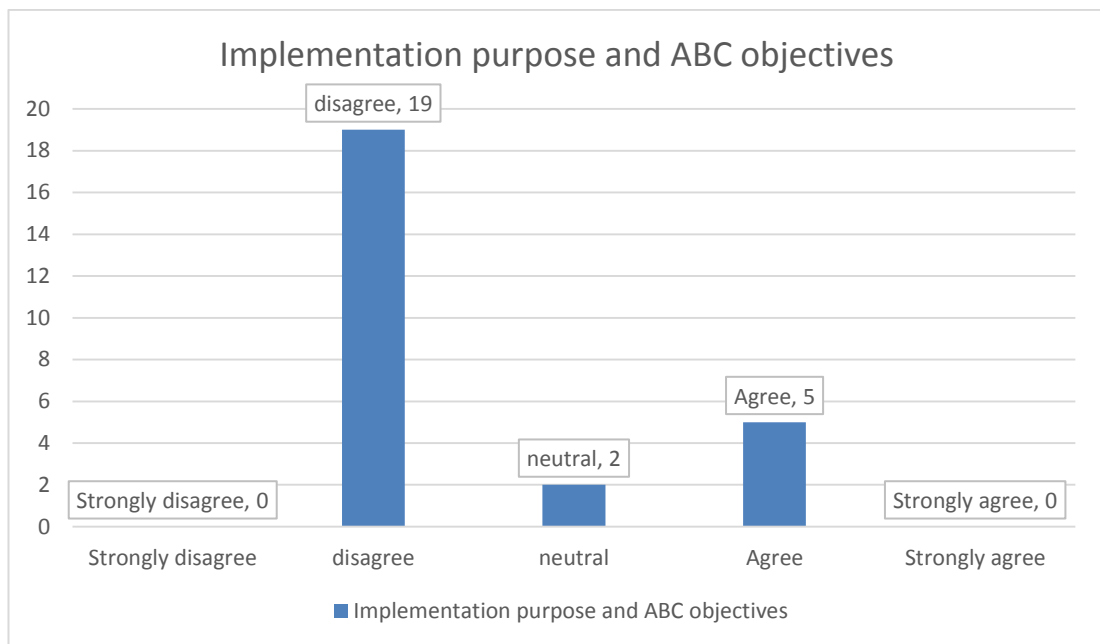


Figure 30: Implementation purpose and ABC objectives

The above chart indicates that, while there were no participants who strongly disagreed, there were 19 participants (73%) who disagreed that the purpose and objective of the ABC system were clearly outlined and understood by both the designers and the users of the system. Five respondents (19%) agreed that the purpose and objectives of ABC were clearly outlined and understood. Only two participants (8%) remained neutral.

4.6.5 Top Management Committee

Question 5 in section D was used to extract information on how top management was committed to the use of ABC as a basis for the decision-making process. Twenty-four participants answered the question resulting in a 92% response rate. The results of this question are presented in Figure 31 below.

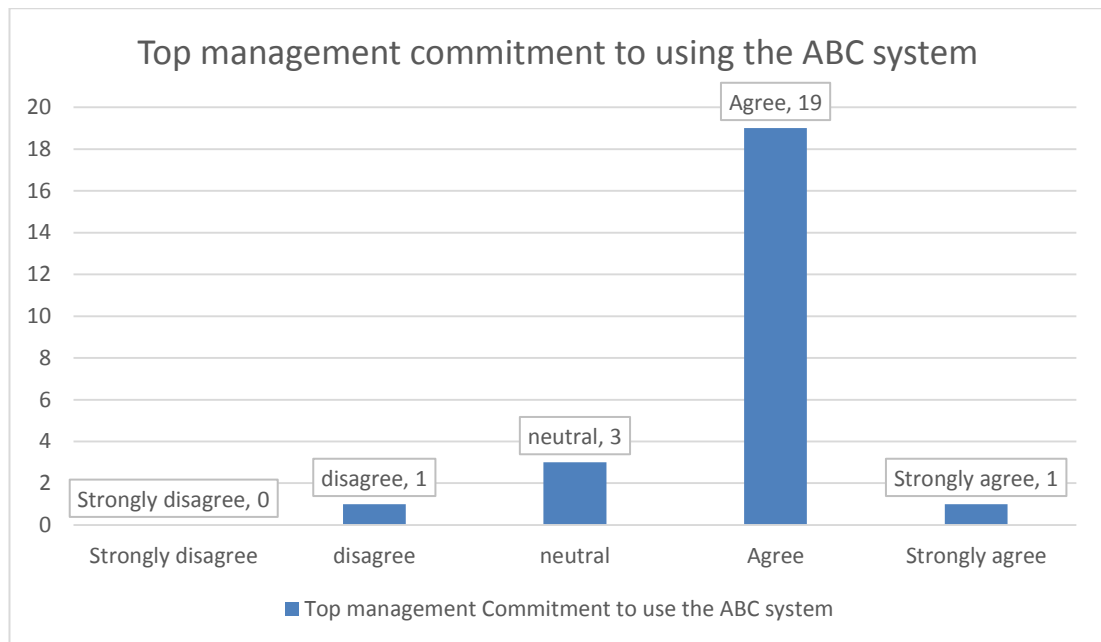


Figure 31: Top management commitment to using the ABC system

There were no participants who strongly disagreed. One participant (4%) and 19 participants (79%) disagreed and agreed respectively to the notion that top management was committed to the use of ABC information as a basis for decision-making. However, three respondents (13%) remained neutral, while only one respondent (4%) strongly agreed. Figure 32 shows that a total of 83% indicate that top management were committed to the use of the ABC system as a basis for decision-making at the GIPF.

4.6.6 Provision of adequate training on ABC implementation

One of the key success factors of ABC implementation is the provision of training to both the implementers and the users. Question 6 in section D was used to extract information on whether management provided sufficiently appropriate training. The question received 23 responses. This represents an 85% response rate.

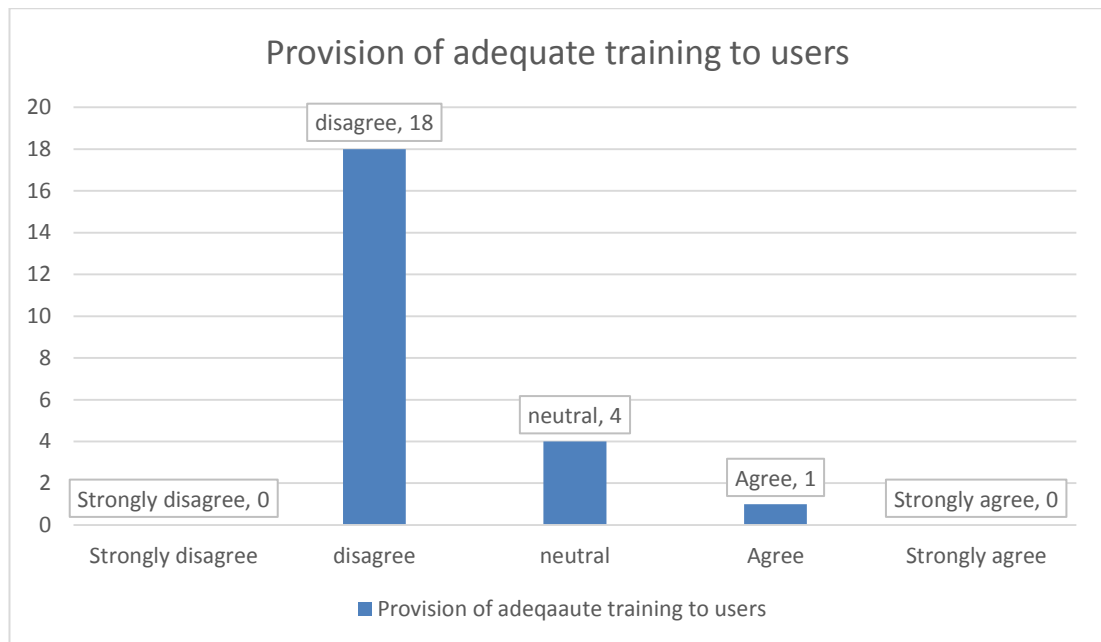


Figure 32: Provision of adequate training to users

The above figure indicates that there were no respondents who strongly disagreed. Eighteen respondents (79%) disagreed with the notion that adequate training was provided by management to the users. The graph further indicates that four participants (17%) chose to remain neutral. One participant (4%) agreed that adequate training was provided. However, none of the participants strongly agreed with the notion. The study, therefore, indicates that the implementation of ABC was not supported by adequate resources.

4.6.7 ABC benefits exceeded the cost of implementation

The success of ABC is measured by how much the benefits have exceeded the cost of implementation. Question 7 in section D was used to determine whether the benefits exceeded the cost of implementation.

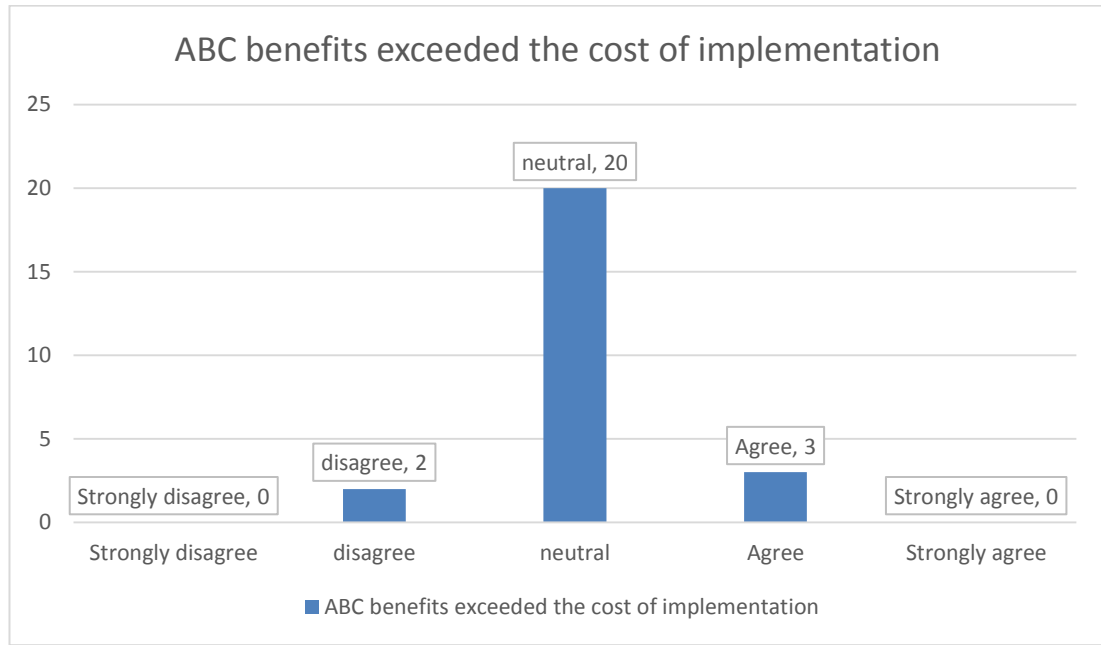


Figure 33: ABC benefits exceeded the cost of implementation

There were no participants who strongly disagreed or strongly agreed that the benefits of implementation exceeded the cost of implementation. Twenty participants (80%) chose to remain neutral. Two respondents (8%) disagreed, while three respondents (12%) agreed that the benefits exceeded the costs of implementing ABC. The study cannot, therefore, be conclusive since a larger proportion of the respondents decided to be neutral.

4.7 Measures and requirements for upgrade

The use or implementation of ABC requires that an organisation should have measures and requirements for upgrading an ABC system. Section E of the question

had four sub-questions which were intended to extract information for determining whether the GIPF had provided possible upgrades. The various responses are presented in the section below.

4.7.1 Creation and implementation of an improved ABC-oriented system

Question 1 in section E was designed to extract information on whether there were compelling reasons to create and implement a new ABC system. Twenty-three participants answered this question. An 85% response rate was attained on this question. The data collected for the question is presented and analysed in Figure 34 below.

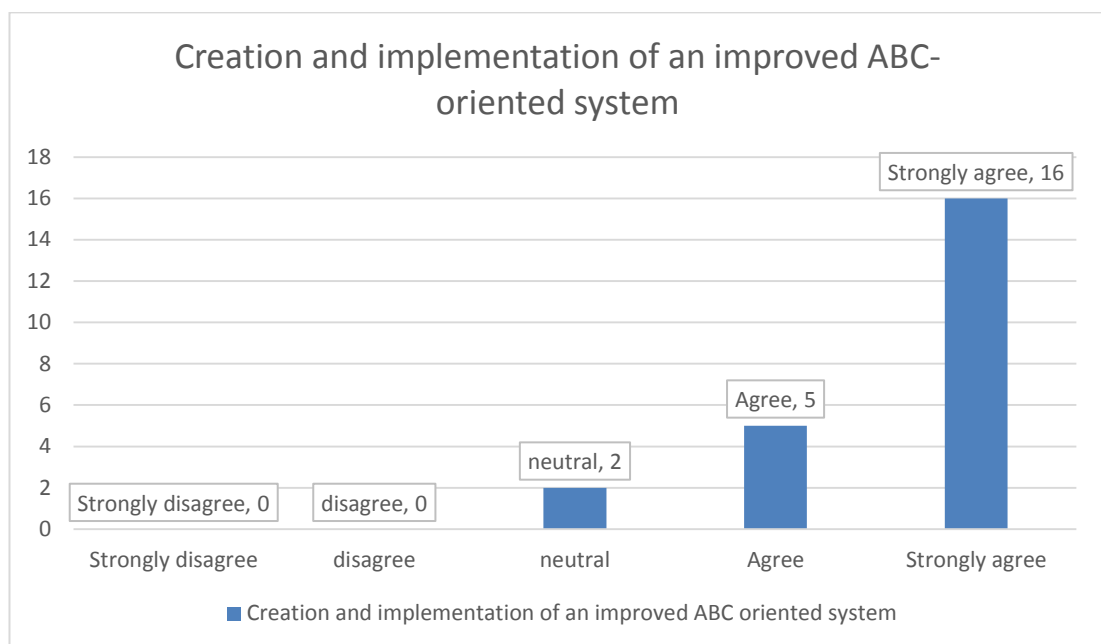


Figure 34: Creation and implementation of an improved ABC-oriented system

Five respondents (22%) chose to remain neutral. However, 16 respondents (70%) strongly agreed that there was a need to create, implement and improve an ABC-oriented system. Only two (9%) chose to be neutral. The above figure shows that a

total of 92% were in agreement. The finding of the study is, therefore, that the GIPF had prepared for an improved ABC-oriented system.

4.7.2 Behaviour change

Proponents of ABC have claimed that there is always the need for change of behaviour. Question 2 in section E of the questionnaire was designed with the objective of measuring whether there was a behavioural change as a result of implementing an ABC system at the GIPF. The results are presented in Figure 35 below.

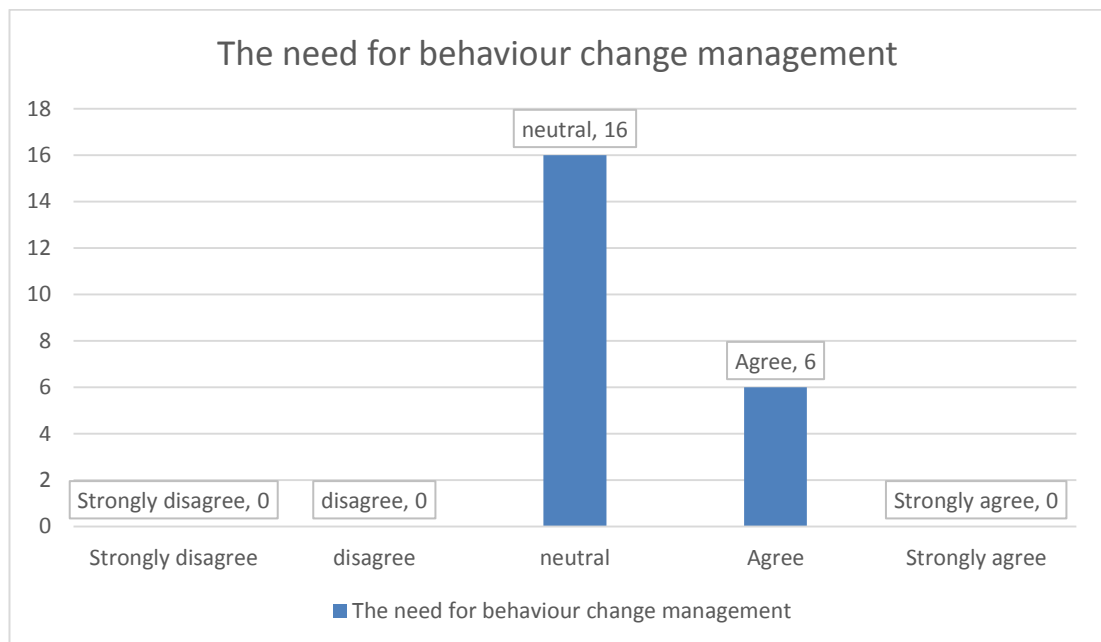


Figure 35: The need for behaviour change management

Twenty-two participants took part in the question. None of the participants disagreed or strongly disagreed with the need for behaviour change. However, 16 participants (73 %) chose to remain neutral, while six (27%) agreed; the response for “strongly agreed” was zero. The finding of the study is that the GIPF managed to achieve behaviour change to some extent, though it is not very conclusive.

4.7.3 Introduction of time-driven ABC

Some authors have advocated for the introduction of TDABC. The objective of question 3 in section E was to determine whether there was a demand for the introduction of TDABC. The introduction of TDABC is intended to curb some of the weaknesses of traditional ABC. Figure 36 below presents the findings of the study.

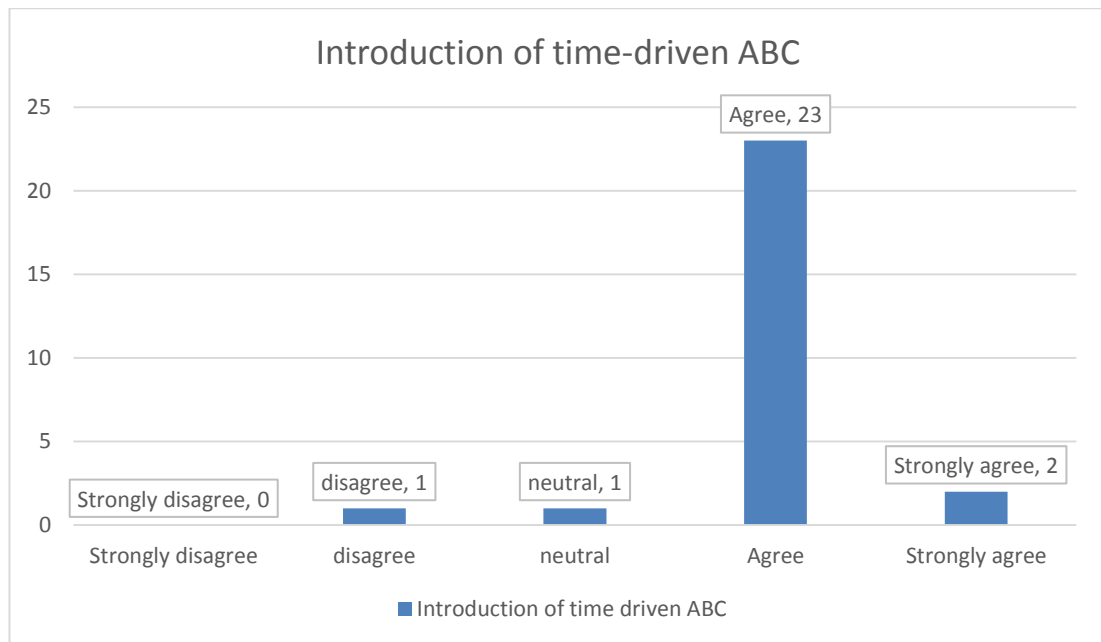


Figure 36: Introduction of time-driven ABC

None of the respondents strongly disagreed that there was a need to introduce TDABC. One respondent (4%) disagreed, while two respondents (7%) strongly agreed. One respondent (4%) chose to remain neutral, while 23 respondents (85%) agreed that there was need for TDABC. The finding of the study is, therefore, that the need for TDABC was highly rated.

4.7.4 Process and procedure re-engineering

The fourth question in section E of the questionnaire was to obtain data on whether the adoption of TDABC led to process and procedure re-engineering. The question

received 22 responses. This number represents an 81% response rate for the question.

The data analysis is presented in Figure 37 below.

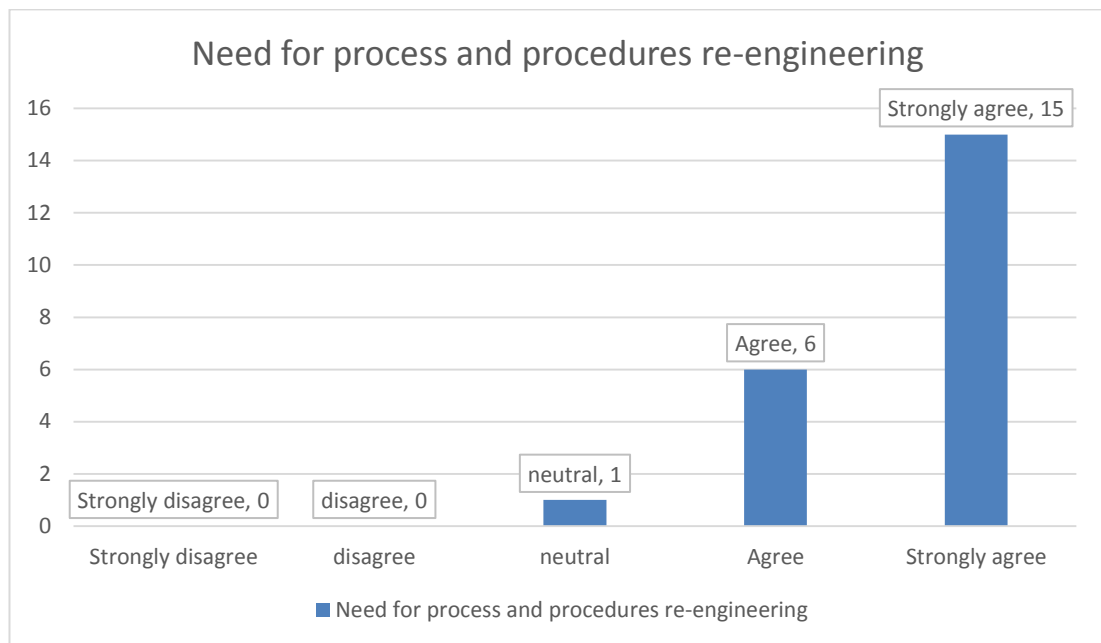


Figure 37: Need for process and procedures re-engineering

None of the participants disagreed or strongly disagreed with the need for process and procedure re-engineering. Only one respondent (5%) remained neutral, while 15 respondents (68 %) indicated that they strongly agreed with re-engineering. Six respondents (27%) agreed. Overall, 21 respondents (95%) were in agreement. The finding of the study is, therefore, that the need for process and procedure re-engineering was rated very high.

4.8 Comparison of the traditional costing methods with ABC: discovery of unique changes to the GIPF

Section F of the questionnaire sought to determine whether there were unique changes to the GIPF as a result of the adoption of an ABC system. This section had six short questions.

4.8.1 Effective Cost Management

The objective of question 1 in section F of the research instrument was to determine whether there was improved cost management at the GIPF following the adoption of ABC. A total of 24 participants, representing an 89% response rate, responded. The data analysis of this item is presented in Figure 38 below.

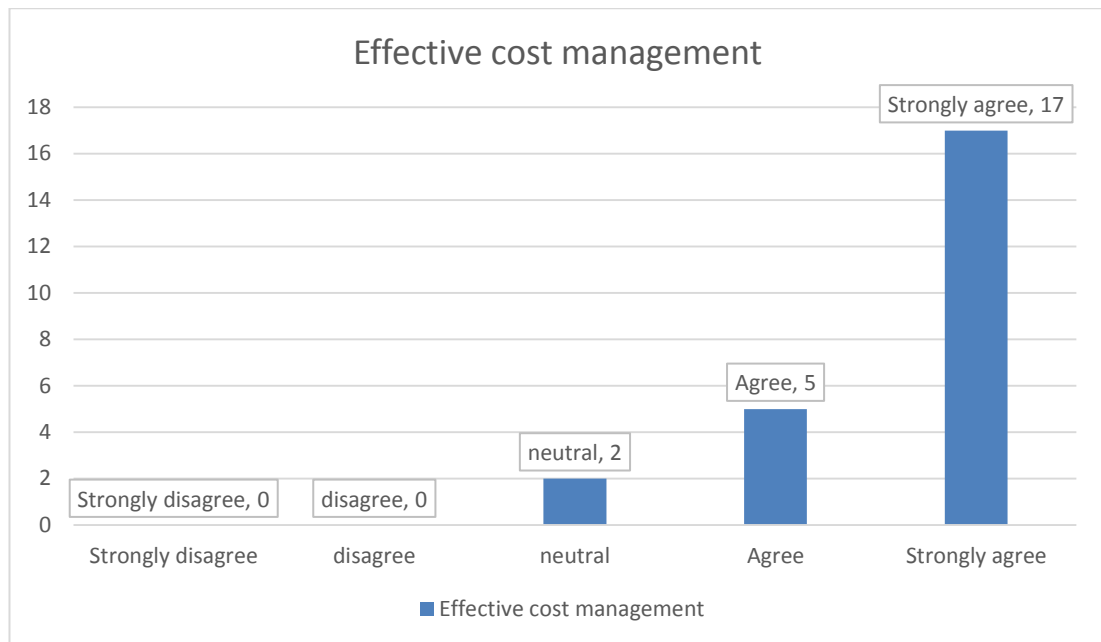


Figure 38: Effective cost management

There were no respondents who disagreed or strongly disagreed with the notion that ABC leads to effective management of costs at the GIPF. Two respondents (8%) remained neutral, five respondents (21%) agreed, while 17 respondents (71%) strongly agreed that ABC led to effective cost management. Overall, 22 respondents agreed that the adoption of ABC led to effective cost management when compared with traditional costing methods. The finding of the study is that effective cost management is ranked highly, thereby indicating that the introduction of an ABC system at the GIPF led to an effective cost management system.

4.8.2 Cost of service provision

The objective of question 2 was to determine whether the adoption of ABC made it easy for the GIPF to determine the cost per service provided to members. The question received 24 responses that represents an 89% response rate. Figure 39 below presents the results.

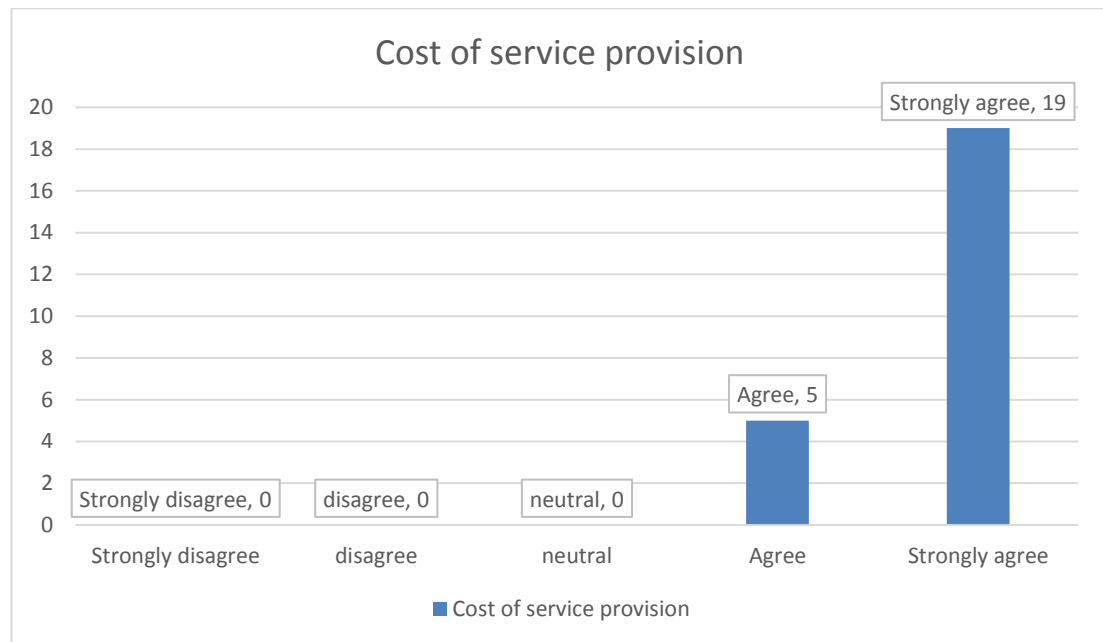


Figure 39: Cost of service provision

Five respondents (19%) indicated that the adoption of ABC at the GIPF made it possible to determine the cost per service provided. The balance of 19 responses (70%) strongly agreed. Based on the data presented in Figure 39 above, the study, therefore, found that the introduction of an ABC system enabled the GIPF to determine the cost of providing a service.

4.8.3 Cumbersome budgeting process

Section F had a question whose objective was to determine whether the adoption of ABC had led to the budgeting process becoming cumbersome. The question received 25 responses. The data on this item is presented in Figure 40 below.

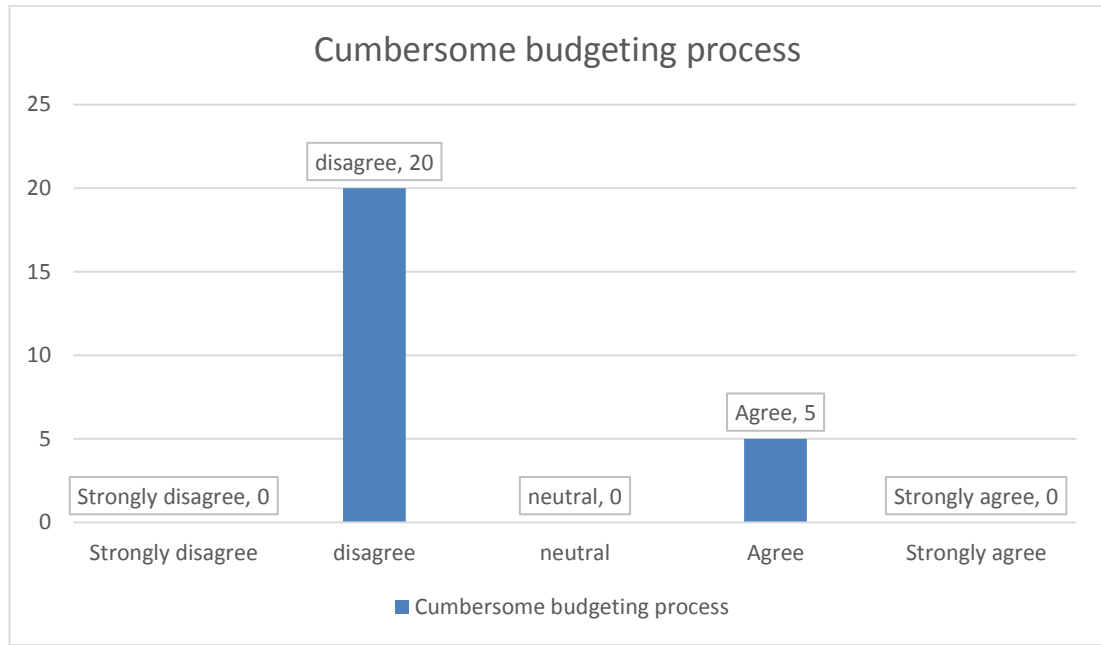


Figure 40: Cumbersome budgeting process

There were no participants who strongly disagreed, remained neutral or strongly agreed. However, 20 respondents (80%) disagreed with the notion that the budgeting process had become cumbersome. Furthermore, only five (10%) respondents agreed that budgeting had become cumbersome. The finding of this study is, therefore, that, while some felt that budgeting had become cumbersome, the majority were not of the same view.

4.8.4 Increase in service delivery

Question four in section F was used to determine whether ABC had led to an improvement in service delivery by the GIPF. The question received 24 responses.

The results of this question are presented in Figure 41 below.

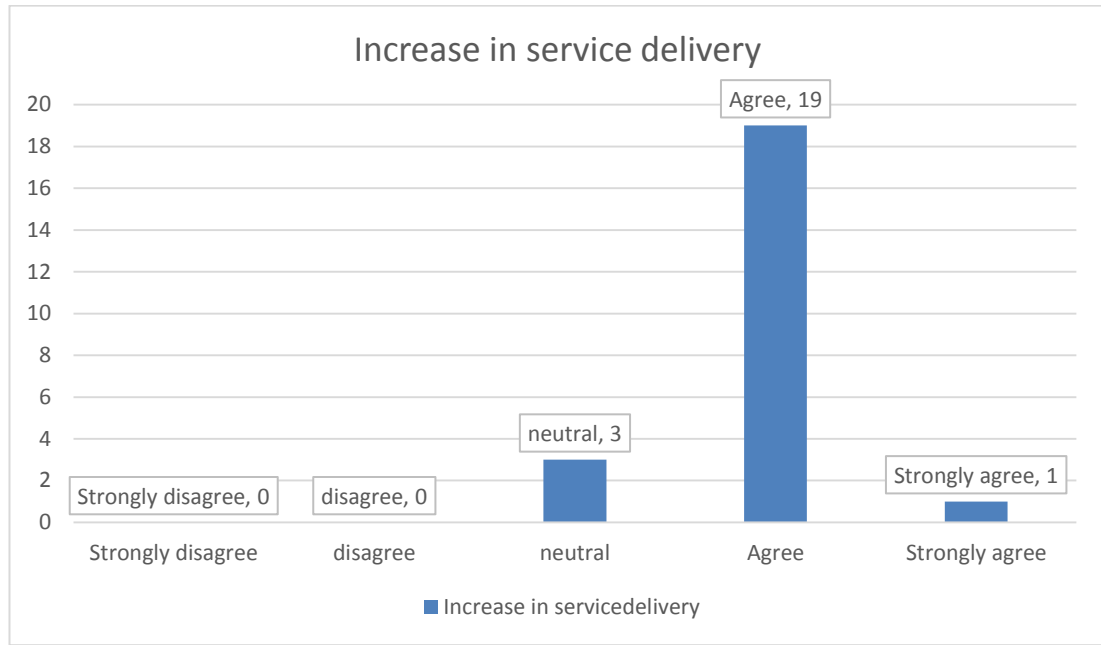


Figure 41: Increase in service delivery

Three respondents (13%) chose to remain neutral, while 19 respondents (83%) agreed that the adoption of ABC led to an improvement in service delivery. Only one respondent (4%) strongly agreed. There were no participants who disagreed or strongly disagreed. The finding of the study is, therefore, that the adoption of ABC at the GIPF led to an increase in service delivery.

4.8.5 Accounting for strategic planning activities

The objective of question 5 in section F was to determine whether ABC assisted management to account for all planned activities as detailed in the strategic plan. The

question received a total of 23 respondents which represents an 85% response rate.

The results of this question are presented in Figure 42 below.

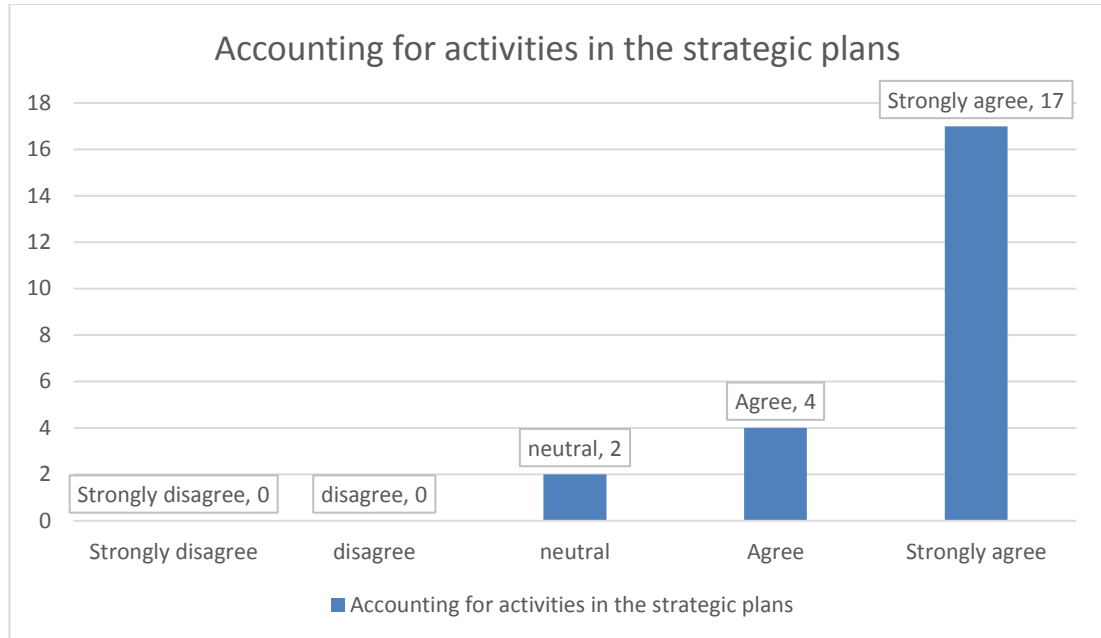


Figure 42: Accounting for activities in the strategic plans

None of the participants disagreed or strongly disagreed that the adoption of ABC led management to account for all planned activities easily. Two respondents (9%) chose to remain neutral, four respondents (17%) agreed, while 17 respondents (74%) strongly agreed that the adoption of ABC made it easy for management to easily account for all activities contained in the strategic plan. The finding of the study based on this question is that ABC enabled management to account for all activities contained in its strategic plans.

4.8.6 Management reporting

Question 6 in section F sought to determine whether the adoption of ABC led to improvements in management reporting and budgeting analysis. The question

received 24 responses, thus achieving an 89% response rate. The results of this question are presented in Figure 43 below.

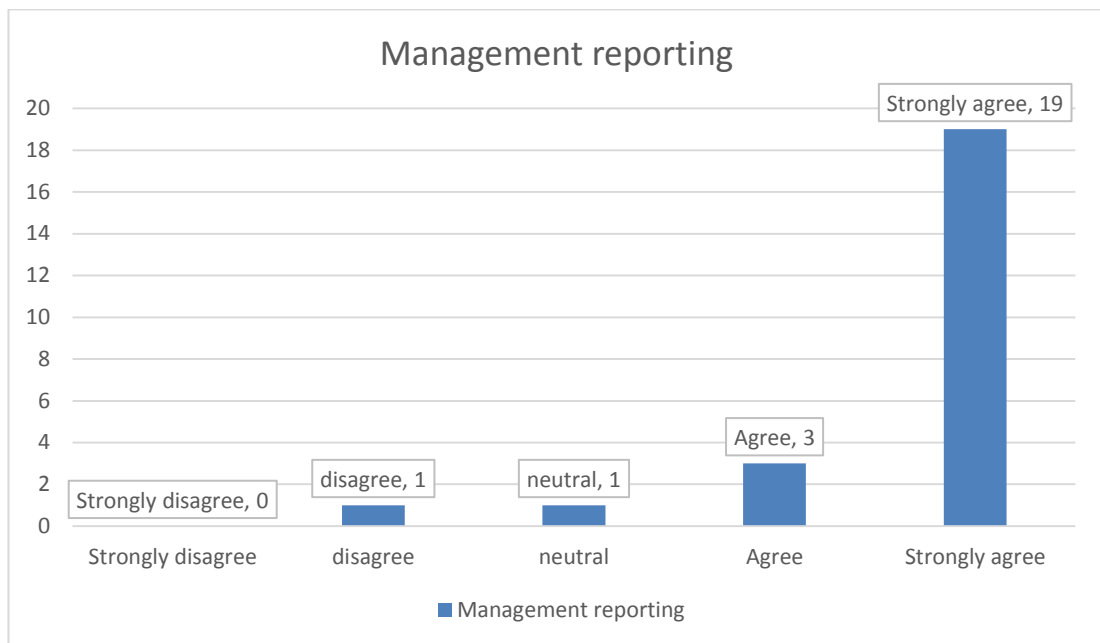


Figure 43: Management reporting

There was no respondent who strongly disagreed. One participant (8%) chose to be neutral, while another single participant disagreed. Three respondents (13%) agreed, while 19 (79%) strongly agreed with the notion that there were improvements in management reporting. The above results indicate that 82% of the respondents agreed that ABC adoption enabled the GIPF to correctly report on costs. The finding of the study is that the adoption of ABC enabled the GIPF to improve its cost reporting system.

4.9 Benefits of TDABC to GIPF

Section G of the questionnaire was used to extract information on the benefits that could accrue to the GIPF. Section G had seven short questions. The main objective of section G was to determine how TDABC was going to be beneficial to the GIPF.

The results of this section are reported in paragraphs 4.9.1 to 4.9.7 and related charts below.

4.9.1 Estimation of cost per unit

Question 1 in section G of the questionnaire dealt with the issue of cost estimation per unit of capacity. The objective of question 1 was to determine whether the GIPF benefited in managing its capacity by using TDABC. The question received 24 respondents, achieving an 89% response rate. The results of this question are presented in Figure 44 below.

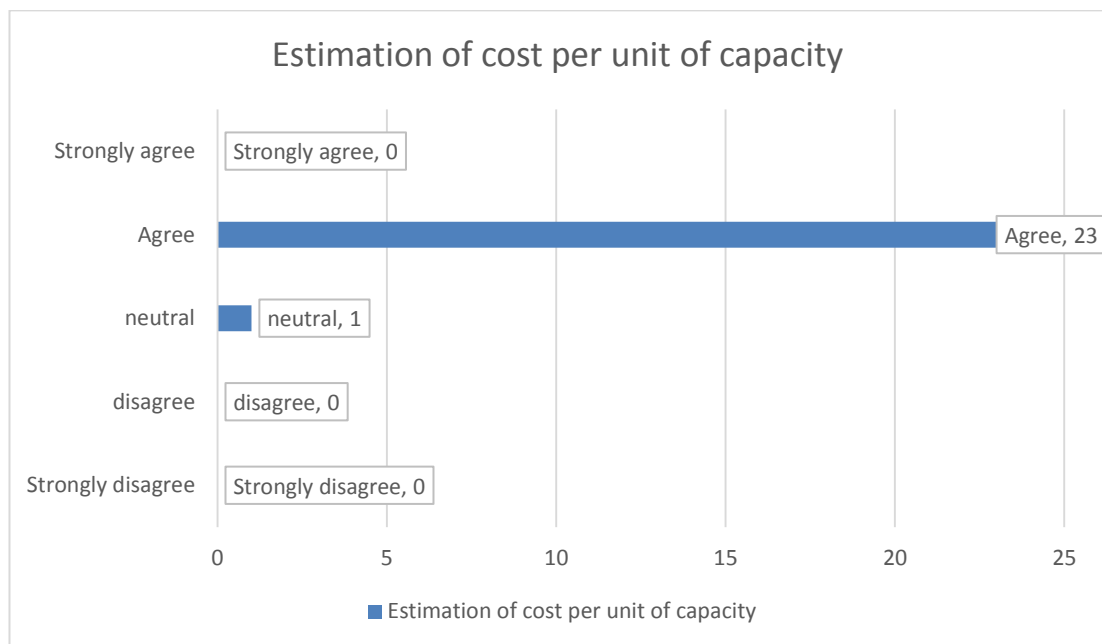


Figure 44: Estimation of cost per unit of capacity

No participants disagreed or strongly disagreed; however, one respondent (4%) chose to be neutral. Twenty-three (96%) participants agreed that TDABC enabled management to estimate the cost per time unit of capacity. These results show that

TDABC enabled the GIPF to estimate the cost per unit of capacity used to provide a service to its members.

4.9.2 Maximisation of internal capacity and resources

Question 2 in section G was designed to determine whether there was a maximisation of internal capacity and resources that accrued to the GIPF as a benefit from the adoption of the ABC system. The question received 25 responses. This represents an overall response rate of almost 93%. The results of this question are presented in Figure 45 below.

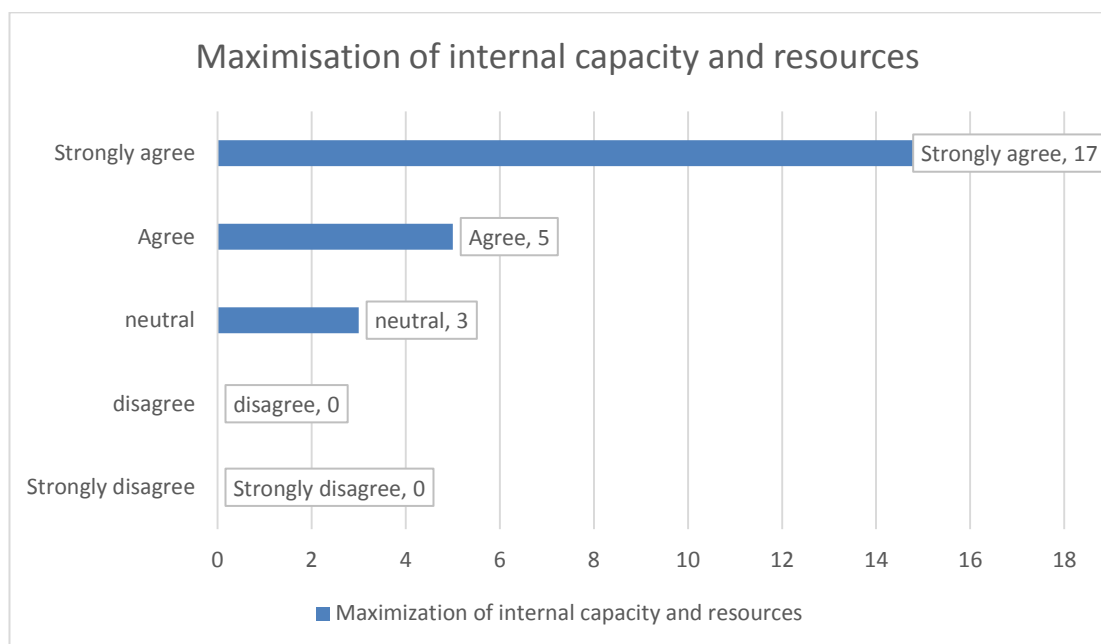


Figure 45: Maximisation of internal capacity and resources

There were no respondents who disagreed or strongly disagreed. Three respondents (12%) chose to remain neutral, five respondents (20%) agreed, while 17 respondents (68%) strongly agreed with the notion that the maximisation of internal capacity and resources accrued as a benefit to the GIPF following the adoption of ABC. The

results indicate that 88% of the respondents agreed that the GIPF benefited from the use of TDABC. The finding of the study based on this question is that the adoption of an ABC system enabled the GIPF to maximise internal capacity and resources.

4.9.3 Accurate cost driver estimates

Question 3 in section G of the research instrument was designed with the objective of determining whether the time-driven ABC system enabled more cost driver estimates. The question received 22 responses, achieving an 81% response rate. The results of this question are presented in figure 46 below.

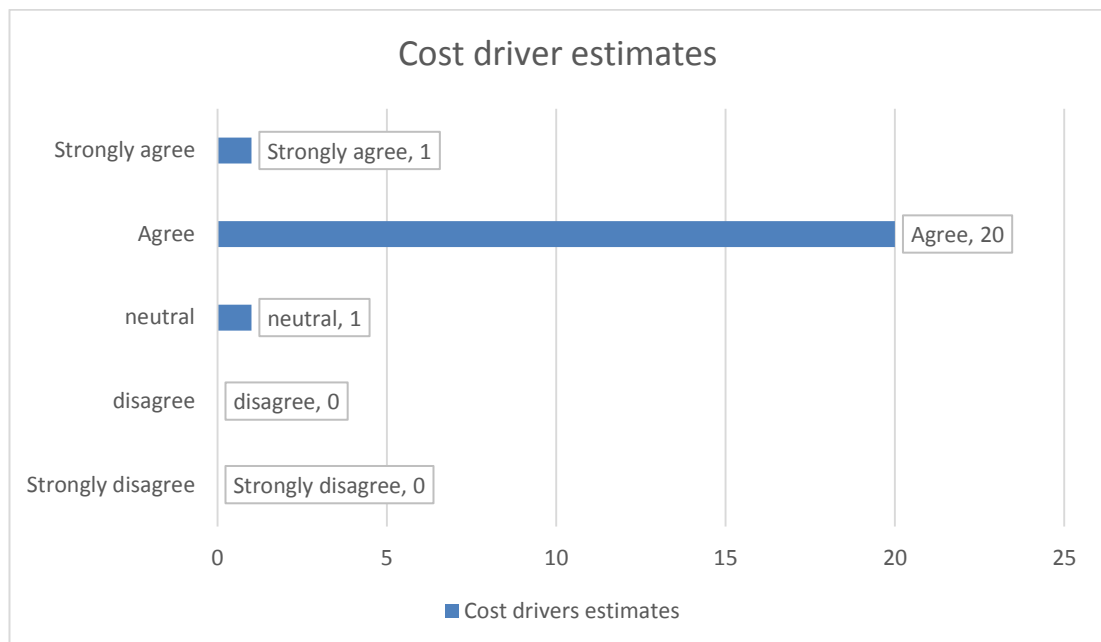


Figure 46: Cost drivers estimates

There were no respondents who disagreed or strongly disagreed. One respondent (4%) chose to remain neutral. A total of 20 respondents (92%) agreed that accurate cost driver estimates were a benefit of using TDABC. One participant (4%) strongly agreed. The above results indicate that about 96% of the respondents agreed that the introduction of TDABC enabled the GIPF to estimate cost drivers accurately.

4.9.4 Improved process and member satisfaction

The objective of question 4 in section G of the research instrument was to determine whether the GIPF improved its operational process, which culminated in improved member satisfaction. The improvement of the process and ultimate customer satisfaction is one of the key objectives of TDABC. Twenty-three respondents answered the question. The question thus received an 85% response rate. The results of this question are presented in Figure 47 below.

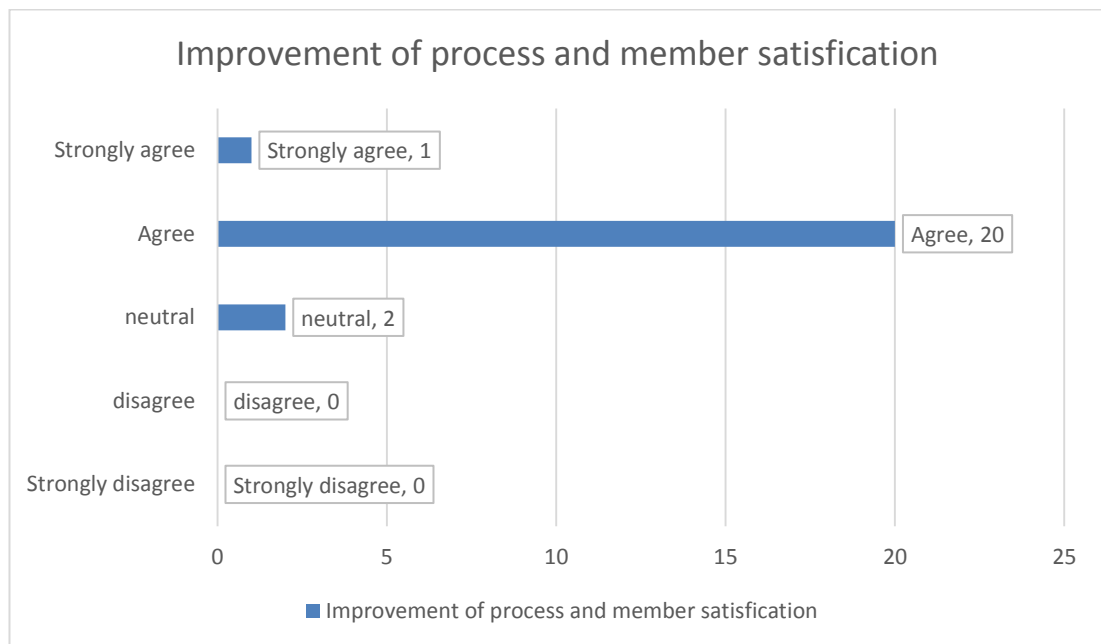


Figure 47: Improvement of process and member satisfaction

Only two respondents (8%) opted to be neutral. One respondent (4%) and 20 respondents (88%) respectively agreed and strongly agreed that TDABC led to improved process and customer satisfaction. There were no respondents who either disagreed or strongly disagreed. The finding of the study is, therefore, that the adoption of TDABC enabled the GIPF to improve its processes and customer satisfaction.

4.9.5 Estimation of unit times

The objective of question 5 in section G of the questionnaire was to determine whether the introduction of TDABC enabled the GIPF to estimate the amount of time required to undertake its various activities. The question received an 89% response rate as a result of having been answered by 24 respondents. The results for this question are shown in Figure 48 below.

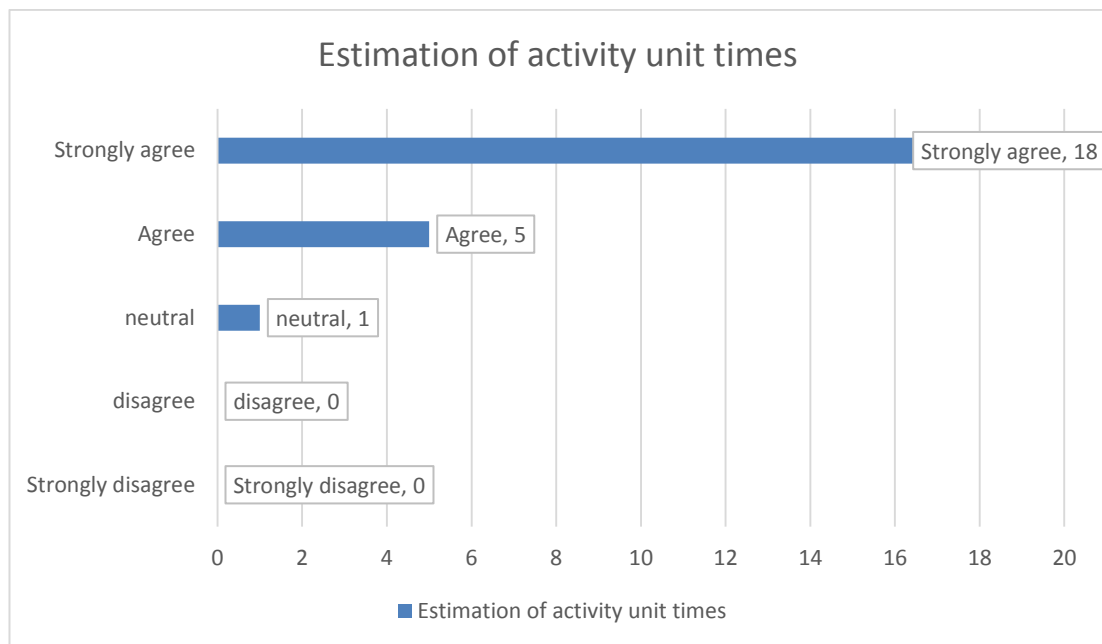


Figure 48: Estimation of activity unit times

There were no respondents who disagreed or strongly disagreed. One respondent (4%) remained neutral, five respondents (21%) agreed, while 18 respondents (75%) strongly agreed that TDABC led to the improvement of the GIPF processes and membership satisfaction. The results above indicate that there were a few participants who disagreed, while 96% of the respondents agreed that TDABC enabled the GIPF to estimate activity times correctly. The finding of the study is, therefore, that the GIPF was able to estimate time requirements of activities as a result of adopting a TDABC system.

4.9.6 Identification of operational and strategic improvements

One of the key objectives of TDABC is to assist an organisation to identify operational and strategic improvements. Question 6 in section G was designed with the objective to determine whether the use of TDABC helped the GIPF to identify operational and strategic improvements. The question received 24 responses representing an 89% response rate. The results for this question are shown in Figure 49 below.

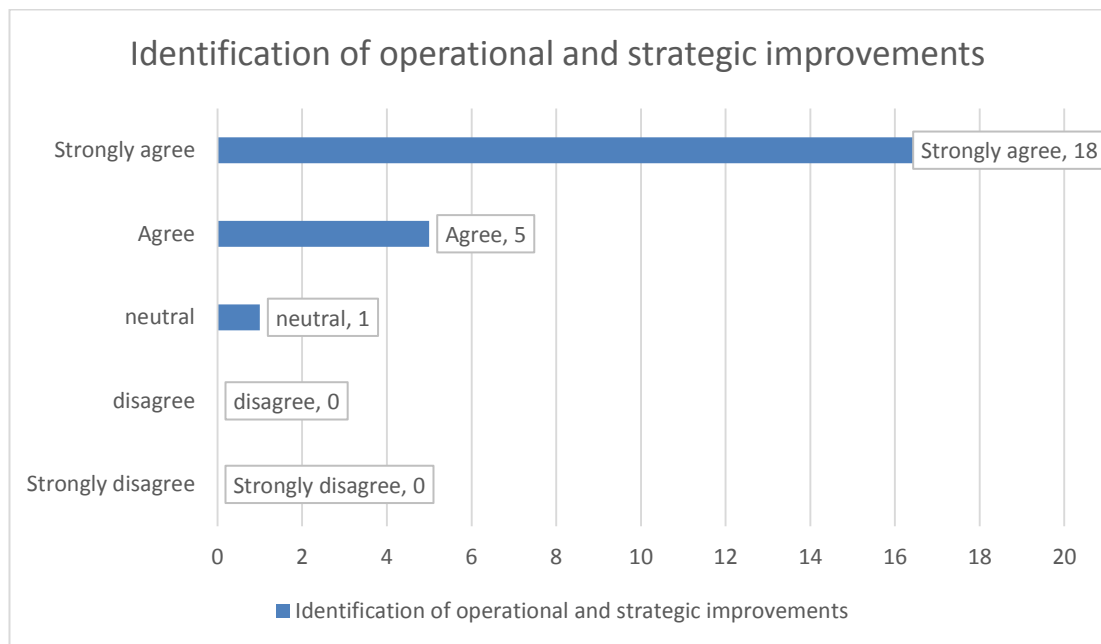


Figure 49: Identification of operational and strategic improvements

There were no respondents who disagreed or strongly disagreed that TDABC helped the GIPF to identify operational and strategic improvements. One respondent (4%) was neutral. Five respondents (21%) agreed, while 18 respondents (75%) strongly agreed that TDABC enabled the GIPF to identify operational and strategic improvements. The above results indicate that 96% agreed that the adoption of TDABC had a positive impact on the identification of operational and strategic

opportunities at the GIPF. The finding of the study is that the GIPF managed to identify operational and strategic improvements as a result of adopting TDABC.

4.9.7 Cost reporting

Question 7 in section G was designed with the main objective of determining whether the use of TDABC helped the GIPF to provide accurate reports on costs. Twenty-three participants answered the question. Question 7, therefore, received a response rate of 85%. The results for this question are shown in Figure 50 below.

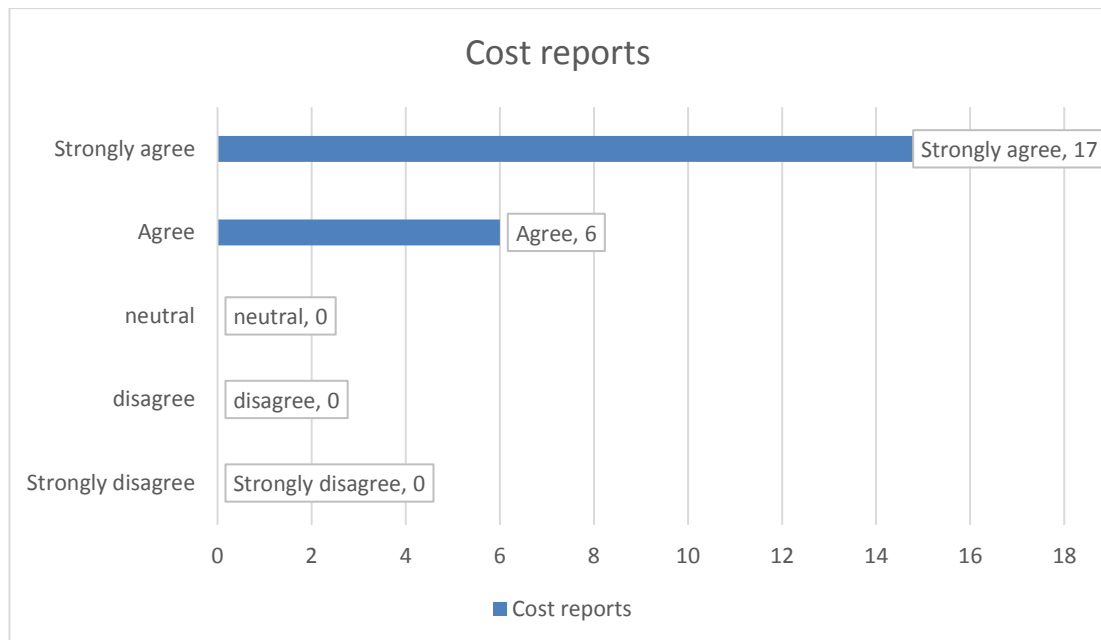


Figure 50: Cost reports

None of the participants decided to disagree or strongly disagree, or to be neutral. All 23 respondents were in agreement. Six participants (26%) agreed, while 17 participants (74%) strongly agreed that TDABC helped the GIPF to accurately analyse and report costs. An analysis of the above results clearly indicates that there was a 100% agreement that TDABC allowed the GIPF management to provide

correct cost reports. The finding of the study is, therefore, that the GIPF managed to provide accurate cost reports as a result of adopting the TDABC system.

4.10 Summary

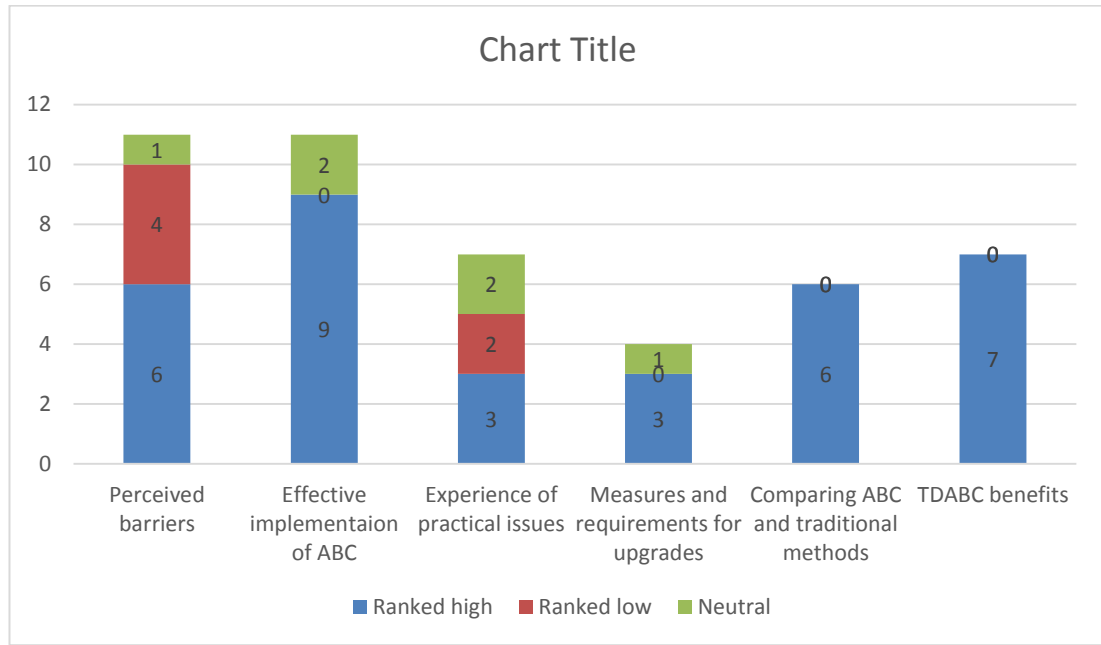


Figure 51: Summary of key findings

Figure 51 above gives an analysis of the overall rankings of key sections of the research instrument. Section B of the questionnaire had eleven items which were used to rank perceived barriers. From the above analysis, the six barriers were ranked as high. Five items were ranked low. The findings indicate that only six barriers were considered to have impeded the implementation of ABC at the GIPF.

The next section of the questionnaire dealt with the effective implementation of ABC. The section had eleven items that the respondents had to deal with. High ranking of these items is a reflection of effective implementation. Figure 51 above

indicates that nine items were ranked high, indicating the implementation as effective.

The next section of the questionnaire addressed the practical experiences regarding the implementation of ABC. The section had seven items that the respondents had to deal with. High ranking of these items is also a reflection of effective implementation. Figure 51 above indicates that three items ranked the implementation as effective, while two were ranked low. The results indicate mixed results regarding practical challenges in implementing ABC when consideration is given to those ranked low and those that were a neutral ranking.

After the practical experiences section regarding the implementation of ABC came the section that dealt with measures and requirements for upgrading. The section had four items. High ranking of these items is a reflection of effective implementation as part of continuous improvement of the system. Figure 51 above indicates that three items were ranked high, indicating the availability of measures for upgrades as high.

Section F of the research instrument addressed the comparison of traditional costing methods with an ABC system. The section had six items which the respondents had to deal with. High ranking of these items is a reflection of effective implementation of an ABC system if the responses were in favour of the ABC system. The summary in Figure 51 above indicates that all items were ranked high, indicating the improvement brought about by the adoption of the TDABC system.

The last section of the research instrument addressed the issue of whether TDABC brought in benefits to the GIPF. This section had seven items. High ranking of these items is a reflection that the introduction of TDABC brought in some benefits to the GIPF. The summary in Figure 51 above indicates that all items were ranked high, indicating that the introduction of TDABC brought in some benefits.

The overall ranking was as follows: perceived barriers, 54%; effective implementation, 82%; practical issues, 43%; comparison of ABC with traditional costing, 100%; measures and requirements, 75%; and TDABC benefits, 100%. The average of these high rankings is 76%. It means that approximately 76% of the items were ranked high too highly.

The next chapter of this study, chapter 5, will discuss the conclusions emanating from the findings of this chapter. Chapter 5 will also present some recommendations based on the overall conclusions of the study.

CHAPTER FIVE

CONCLUSIONS AND RECOMMENDATIONS

5.1 Introduction

This chapter discusses the conclusions emanating from the discussion of the findings of the study presented in chapter four of this study. Sections 5.2 to 5.6 discusses the perceived barriers to the implementation of ABC, practical issues of ABC, a comparison of the traditional approach with ABC and the benefits of ABC respectively. Section 6 of this chapter presents recommendations stemming from the conclusions, including areas for further study. The chapter concludes with a conclusion section in paragraph 5.10. To refresh the reader's mind, the objective and the six sub-research questions are presented as follows:

The main objective of this study was to investigate the effectiveness of the implementation of the ABC system by the GIPF. The study sought to determine any challenges that the organisation is likely to face during and after implementation. This study, therefore, sought to answer the following specific questions:

- 5.1.1** Was ABC implemented effectively at the GIPF?
- 5.1.2** To what extent did the programme achieve its goals and objectives?
- 5.1.3** What challenges did the organisation encounter in the implementation process and post-implementation?
- 5.1.4** What were the experiences and lessons learnt from the implementation process?
- 5.1.5** Are there any measures put in place by the GIPF to upgrade the ABC system?
- 5.1.6** What benefits will the GIPF gain by implementing Time-Driven ABC?

5.2 Perceived barriers impeding the adoption of ABC

5.2.1 High cost of implementation

The issue of high cost involved in the implementation of ABC was discussed in paragraph 2.6.7 in chapter 2 of this study. The ABC system has been criticised for being expensive and complex to implement (Stouthuysen *et al.*, 2014). The results presented in paragraph 4.4.1 and figure 5 of chapter 4 indicate that high costs of implementation were not a barrier to the effective adoption and implementation of ABC at the GIPF. The study, therefore, does not support similar studies (for example, Kaplan & Anderson, 2003; Stouthuysen *et al.*, 2014).

5.2.2 Resistance to change

The issue of resistance was discussed in paragraph 2.6.4 of chapter 2. It is claimed that there is normally resistance from employees and management (Cannavacciuolo *et al.*, 2015). This is normally associated with the fear of learning new skills and loss of control. The results presented in paragraph 4.4.2 and figure 6 of chapter 4 indicate that 81% of the respondents indicated that resistance to change weighed against effective implementation of ABC at the GIPF. The study, therefore, concludes that resistance to change was a barrier to effective implementation of ABC at the GIPF.

5.2.3 Involves great deal of work

It has been cited that the adoption of an ABC system involves much work, which then acts as a barrier to effective adoption and implementation of an ABC system. Kaszubski and Ebben (2005) claim that ABC involves much work. This issue was discussed in paragraph 2.6.3. The results of this issue are presented in paragraph 4.4.3 and figure 7 respectively. The results reveal that 84% of the respondents

indicated that the adoption and implementation of an ABC system requires great understanding and knowledge of all the employees. The study, therefore, concludes that the implementation of an ABC system involves a great deal of work.

5.2.4 Time-consuming

One of the barriers of adoption and implementation of an ABC system is the fact that the system has been criticised as time-consuming (Rundora *et al.*, 2013). The issue was discussed in paragraph 2.6.6 of chapter 2 of this study. The results of this study on the issue of ABC being a time-consuming exercise were discussed and presented in paragraph 4.4.4 and figure 8 of chapter 4. The results show that 78% of the respondents agreed that the adoption and implementation of ABC was time-consuming. The study, therefore, concludes that the adoption of ABC is time-consuming.

5.2.5 Lack of top management support

Lack of top management has been cited as one of the barriers of ABC adoption and implementation. According to Pierce and Brown (2006), the success of an ABC system hinges on top management support in all phases. This element was discussed in paragraph 2.9 of chapter 2 of this study. The results covering top management support are presented in section 4.4.6 and figure 9 of chapter 4 of this study. The findings of the study were that 84% of the respondents did not agree that lack of top management support was a barrier in the adoption of ABC at the GIPF. The study, therefore, concludes that lack of top management support did not have an impact on the adoption of ABC at the GIPF.

5.2.6 Lack of cooperation between departments

It is argued that some companies are not adopting ABC due to organisational, environmental and individual barriers. Lack of cooperation has been cited as one the barriers of ABC adoption and implementation. According to Cannavacciuolo *et al.* (2015), the success of an ABC system depends on cooperation between departments. This element was discussed in paragraph 2.6.4 of chapter 2 of this study. The results covering top management support are presented in section 4.4.5 and figure 10 of chapter of 4 of this study. The findings of the study were that a total of 81% of the respondents did not agree that lack of cooperation was a barrier in the adoption of ABC at the GIPF. The study, therefore, concludes that lack of departmental cooperation did not have an impact on the adoption of ABC at the GIPF.

5.2.7 Lack of ABC knowledge

It is argued that some companies are not adopting ABC due to the system being more complex than traditional costing methods (Chea, 2011). Lack of cooperation has been cited as one of the barriers of ABC adoption and implementation (Burnet, 2009). This element was discussed in paragraph 2.3 of chapter 2 of this study. The results covering a lack of ABC knowledge are presented in section 4.4.7 and figure 11 of chapter of 4 of this study. The findings of the study were that a total of 63% of the respondents chose to remain neutral. Only 33% of the respondents indicated that a lack of ABC knowledge was a barrier to the adoption of the system. The study, therefore, cannot conclude that a lack of ABC knowledge had an impact on the adoption of ABC at the GIPF.

5.2.8 Problems in identifying cost drivers

Innes *et al.* (1994) noted that there were basically three levels of cost drivers, namely, pure volume, weight volume and situational cost drivers. However, according to Gunasekaran (1999), as was discussed in paragraph 2.5, sub-paragraph (iii), the challenge is that the selection of cost drivers is normally based on experience and personal judgement. The results concerning the identification of cost drivers is presented in paragraph 4.4.8 and figure 12 of chapter 4 of this study. The results of the study indicate that 71% of the respondents agreed that problems in identifying cost drivers were a barrier to the effective implementation of ABC at the GIPF. The study, therefore, concludes that the effective adoption and implementation of an ABC system at the GIPF was affected by challenges in the identification of cost drivers.

5.2.9 Problems in identifying activities

It has been suggested that the identification and grouping of activities poses challenges in the implementation process of an ABC system (No & Kleiner, 1997). However, according to Gunasekaran (1999), as was discussed in paragraph 2.5, sub-paragraph (i), it is the aggregation of activities that sets the scope and structure of ABC, irrespective of whether the activities are undertaken by human beings or machines. The results concerning the identification of cost drivers is presented in paragraph 4.4.9 and figure 13 of chapter 4 of this study. The results of the study indicate that 78% of the respondents disagreed that problems in identifying activities were a barrier to effective implementation of ABC at the GIPF. The study, therefore, concludes that the effective adoption and implementation of an ABC system at the GIPF was not affected by challenges in the identification of activities.

5.2.10 High costs of external consultants

The high cost of external consultants is also cited as a barrier to the effective implementation of an ABC system as discussed in paragraph 2.6.1 of chapter 2 of this study. However, according to Gunasekaran (1999), a company should establish an ABC team. Cooper (1991) also contends that despite hiring experienced consultants, the team should include an experienced cost accountant, production supervisor and industrial engineer. The results concerning the identification of cost drivers is presented in paragraph 4.4.10 and figure 14 of chapter 4 of this study. The results of the study indicate that 81% of the respondents agreed that high costs of external consultants were a barrier to the effective implementation of ABC at the GIPF. The study, therefore, concludes that the effective adoption and implementation of an ABC system at the GIPF was affected by high costs of external consultants.

5.2.11 Giving priority to other projects

Giving priority to other projects has been cited as a barrier to effective implementation of an ABC system as discussed in paragraph 2.6.9 of chapter 2 of this study. However, according to some studies there are differences in perceptions between users and non-users of an ABC system (Fadzil & Rababah, 2012; Rundora & Selesho, 2014). The results concerning giving priority to other projects is presented in paragraph 4.4.11 and figure 15 of chapter 4 of this study. The results of the study indicate that 84% of the respondents agreed that giving priority to other projects was a barrier to effective implementation of ABC at the GIPF. The study, therefore, concludes that the effective adoption and implementation of an ABC system at the GIPF was affected by giving priority to other changes or projects.

5.3 Effective implementation of ABC

5.3.1 Accurate cost allocation to activities/functions

According to CIMA (2008), an ABC system provides an accurate method of costing products and services. An ABC system provides more accurate product line costings (Innes *et al.*, 2000). The literature review on this issue is covered in paragraph 2.7 of chapter 2 of this study. The results for this item are discussed and presented in paragraph 4.5.1 and figure 16 of chapter 4 of this study. The results thereof indicate that 84% of the respondents were in agreement that the adoption of ABC results in accurate cost allocation. The study, therefore, concludes that the GIPF managed to accurately allocate costs to functions and services after the implementation of an ABC system.

5.3.2 Cost reduction

According to CIMA (2008), an ABC system provides an accurate method of costing products and services. An ABC system assists in cost identification and their related causes, thereby enabling management to reduce costs (Blocher *et al.*, 2008; Innes *et al.*, 2000). The literature review on this issue is covered in paragraph 2.7 of chapter 2 of this study. The results for this item are discussed and presented in paragraph 4.5.2 and figure 17 of chapter 4 of this study. The results thereof indicate that 87% of the respondents were in agreement that the adoption of ABC results in cost reduction. The study, therefore, concludes that the GIPF managed to reduce costs per unit of services provided after the implementation of an ABC system.

5.3.3 Improved performance measurement

An ABC system assists an organisation in its efforts to improve performance measurements ((Pike *et al.*, 2011; Innes *et al.*, 2000; Rundora & Selesho, 2014). The literature review on this issue is covered in paragraph 2.6.10 of chapter 2 of this study. The results for this item are discussed and presented in paragraph 4.5.3 and figure 18 of chapter 4 of this study. The results thereof indicate that 96% of the respondents were in agreement that the adoption of ABC resulted in improved performance measurement. The study, therefore, concludes that the GIPF managed to improve its performance measurement system after the implementation of an ABC system.

5.3.4 Cost reduction efforts

An ABC system assists an organisation in its efforts of cost reduction (Pike *et al.*, 2011; Innes *et al.*, 2000; Rundora & Selesho, 2014). The literature review on this issue is covered in paragraph 2.6.10 of chapter 2 of this study. The results for this item are discussed and presented in paragraph 4.5.4 of chapter 4 of this study. The results presented in figure 19 in chapter 4 indicate that 80% of the respondents were in agreement that the adoption of ABC resulted in improved performance measurement. The study, therefore, concludes that the GIPF managed to improve its performance measurement system after the implementation of an ABC system.

5.3.5 Better decision-making and execution

Better decision-making and execution has been cited as one of the effects of effective implementation of ABC (Rundora & Selesho, 2014). The literature review on this issue is covered in paragraph 2.6.10 of chapter 2 of this study. The results for this

item are discussed and presented in paragraph 4.5.5 of chapter 4 of this study. The results presented in figure 20 in chapter 4 indicate that 87% of the respondents highly ranked this item. The study, therefore, concludes that the GIPF managed to improve its decision-making and execution process after the implementation of an ABC system.

5.3.6 Personal evaluation by respondents

As part of assessing how effective the implementation was, a question was designed to obtain direct opinions from the participants. The results for this item are discussed and presented in paragraph 4.5.6 of chapter 4 of this study. The results presented in figure 21 in chapter 4 indicate that 80% of the respondents decided to be neutral on this item. Only 8% of the participants ranked it low, while 12% ranked it high. The study cannot, therefore, conclusively assess the overall evaluation that the GIPF managed to effectively implement an ABC system.

5.3.7 Elimination of waste through the identification of non-value-adding activities

The elimination of waste has been cited as one of the effects of effective implementation of ABC (Pike *et al.*, 2011). The literature review on this issue is covered in paragraph 2.6.10 of chapter 2 of this study. The results for this item are discussed and presented in paragraph 4.5.8 of chapter 4 of this study. The results presented in figure 23 in chapter 4 indicate that 17% of the respondents decided to be neutral on this item. Sixteen respondents (70%) ranked it high. The study cannot, therefore, conclusively assess the overall evaluation that the GIPF managed to effectively implement an ABC system.

5.3.8 Increased customer satisfaction

It has been claimed that one of the effects of effective implementation of ABC is increased customer satisfaction, both internal and external (Gunasekaran *et al.*, 2005). The literature review on this issue is covered in paragraph 2.6.10 of chapter 2 of this study. The results for this item are discussed and presented in paragraph 4.5.7 of chapter 4 of this study. The results presented in figure 22 in chapter 4 indicate that 17% of the respondents decided to be neutral on this item. Sixteen respondents (70%) ranked it high. The study, therefore, concludes that the GIPF managed to effectively implement an ABC system as evidenced by increased customer satisfaction.

5.3.9 Success of ABC initiatives

It has been claimed that one of the effects of effective implementation of ABC is increased customer satisfaction, both internal and external (Gunasekaran *et al.*, 2005). The literature review on this issue is covered in paragraph 2.6.10 of chapter 2 of this study. Paragraph 4.5.9 of chapter 4 of this study presents the findings of this study based on question 9 of section C of the questionnaire. The results presented in figure 24 in chapter 4 indicate that 81% of the respondents decided to be neutral on this item. Four respondents (15%) ranked it high, with one participant ranking the success of ABC implementation at the GIPF as low. The study cannot, therefore, conclude that the GIPF managed to successfully implement an ABC system based on the respondents' perceptions.

5.3.10 Budgetary control

It has been claimed that one of the effects of effective implementation of ABC is increased customer satisfaction both internal and external (Gunasekaran *et al.*, 2005). The literature review on this issue is covered in paragraph 2.6.10 of chapter 2 of this study. The results for this item are discussed and presented in paragraph 4.5.10 of chapter 4 of this study. The results presented in figure 25 in chapter 4 indicate that 4% of the respondents decided to be neutral on this item. Twenty-two respondents (88%) ranked it high, while 8% ranked it very high. The study, therefore, concludes that the GIPF managed to effectively implement an ABC system.

5.3.11 Improved budgetary process

It has been claimed that one of the effects of effective implementation of an ABC is increased customer satisfaction both internal and external (Gunasekaran *et al.*, 2005). The literature review on this issue is covered in paragraph 2.6.10 of chapter 2 of this study. The results for this item are discussed and presented in paragraph 4.5.11 of chapter 4 of this study. The results presented in figure 26 in chapter 4 indicate that 4% of the respondents decided to be neutral on this item. Twenty-four respondents (96%) ranked it high. The study, therefore, concludes that the GIPF managed to effectively implement an ABC system.

5.4 Experiences regarding practical issues of ABC within GIPF

5.4.1 Provision of adequate resources by top management

It has been claimed that the success of an ABC implementation process depends on the willingness by management to provide adequate resources in terms of finance,

equipment and human capacity (Gunasekaran *et al.*, 2005; Rundora & Selesho, 2014). The literature review on this issue is covered in paragraph 2.6.8 of chapter 2 of this study. The results for this item are discussed and presented in paragraph 4.6.1 of chapter 4 of this study. Figure 27 in chapter 4 presents the findings of the study. One respondent ranked the item very low, one respondent ranked it low, while one respondent decided to be neutral. However, 21 respondents ranked the item high, while one respondent ranked it very high. The study, therefore, concludes that the GIPF managed to effectively implement an ABC system as a result of top management providing adequate resources for its implementation.

5.4.2 Linking of ABC to GIPF competitive strategy

It has been claimed that the success of an ABC implementation process depends on the practicality of linking the objectives of ABC to a firm's competitive strategy (Stouthuysen *et al.*, 2014; Rundora & Selesho, 2014). The literature review on this issue is covered in paragraph 2.6.8 of chapter 2 of this study. The results for this item are discussed and presented in paragraph 4.6.2 of chapter 4 of this study. Figure 28 in chapter 4 presents the the findings of the study. The findings are that five respondents decided to be neutral, while 18 respondents ranked it high. The study, therefore, concludes that the GIPF managed to effectively implement an ABC system as a result of management being able to link the ABC objectives to the organisation's competitive strategies.

5.4.3 Consensus with ABC objectives and aims

It has been argued that having consensus with the objectives and aims of an ABC implementation process was key to its success (Englund & Gerdin, 2008;

Stouthuysen *et al.*, 2014; Rundora & Selesho, 2014). The literature review on this issue is covered in paragraph 2.6.8 of chapter 2 of this study. The results for this item are discussed and presented in paragraph 4.6.3 of chapter 4 of this study. Figure 29 in chapter 4 presents the findings of the study. The findings are that 19 respondents decided to be neutral, one respondent ranked it very high, while four respondents ranked it high. The study cannot, therefore, conclude that the GIPF managed to effectively implement an ABC system based on consensus with the objectives and aims of an ABC.

5.4.4 Implementation purpose and objectives of ABC

It has been noted that the implementation purpose and objectives are some of the key practical issues that need to be considered during the ABC implementation process (Blocher *et al.*, 2008; Gunasekaran *et al.*, 2005). The literature review on this issue is covered in paragraph 2.6.8 of chapter 2 of this study. The results for this item are discussed and presented in paragraph 4.6.4 of chapter 4 of this study. The data analysis presented in figure 30 in chapter 4 shows that 19 respondents evaluated this issue low, two chose to be neutral, while only five respondents ranked it high. The study cannot, therefore, conclude that the GIPF took into account the implementation purpose and objectives during the adoption and implementation of ABC at the GIPF.

5.4.5 Top management commitment

Top management commitment to the ABC implementation process has been cited as a key practical issue for the success of the process (Pierce & Brown, 2006; Sartorius *et al.*, 2007). The literature review on this issue is covered in paragraph 2.6.8 of chapter 2 of this study. The results for this item are discussed and presented in

paragraph 4.6.5 of chapter 4 of this study. The data analysis presented in figure 31 in chapter 4 shows that one respondent evaluated this issue low, three chose to be neutral, while 19 respondents ranked it high. With a total of 20 respondents (83%) ranking top management commitment high, the study, therefore, concludes that the GIPF top management was committed to an ABC implementation process.

5.4.6 Provision of adequate ABC training by management

For any new system to be successful, the provision of adequate training to its users is of the utmost importance. The literature review on this issue is covered in paragraph 2.6.8 of chapter 2 of this study. The results for this item are discussed and presented in paragraph 4.6.6 of chapter 4 of this study. The data analysis presented in figure 32 in chapter 4 shows that 18 respondents evaluated this issue low, four chose to be neutral, while a single respondent ranked it high. With a total of 18 respondents (83%) disputing the provision of adequate training, the study cannot, therefore, conclude that adequate training was provided at the GIPF.

5.4.7 ABC exceeded the cost of implementation

Rundora and Selesho (2014) and Gunasekaran *et al.* (2005) report in separate studies involving users and non-users that both users and non-users ranked the surpassing benefits of ABC high. The literature review on this issue is covered in paragraph 2.6.8 of chapter 2 of this study. The results for this item are discussed and presented in paragraph 4.6.7 of chapter 4 of this study. The data analysis presented in figure 33 in chapter 4 shows that two respondents evaluated this issue low, 20 chose to be neutral, while three respondents ranked it high. With a total of 20 respondents (80%) remaining neutral, while two were disputing that the benefits of ABC exceeded the

cost of implementation, the study cannot, therefore, conclude that the benefits of ABC exceeded the cost of implementing an ABC system at the GIPF.

5.5 Measures and requirements for upgrades

5.5.1 Creation and implementation of an improved ABC-oriented system

Following the criticism of traditional ABC, there was a need for the creation of a new ABC system in the form of TDABC (Chanassad *et al.*, 2014; Chea, 2011; Kaplan & Anderson, 2003). A number of efforts were, therefore, undertaken seeking to improve traditional ABC. The literature review on this issue is covered in paragraph 2.6.11 of chapter 2 of this study. The results for this item are discussed and presented in paragraph 4.7.1 of chapter 4 of this study. The data analysis presented in figure 34 in chapter 4 shows that sixteen respondents evaluated this issue very high, two chose to be neutral, while five respondents ranked it high. There was a total of 21 respondents (92%) who were in agreement that there was a need to create a new ABC system.

5.5.2 Behaviour change

In a separate study at the Oxford University Library Services, Liu *et al.* (2008) found that the introduction of an ABC system led to a change in behaviour by employees in the performance of their duties and how they viewed costs. The literature review on this issue is covered in paragraph 2.3 of chapter 2 of this study. The results for this item are discussed and presented in paragraph 4.7.3 of chapter 4 of this study. The data analysis presented in figure 35 in chapter 4 shows that sixteen respondents evaluated this issue veryhigh, two chose to be neutral, while five respondents ranked it high. With a total of 21 respondents (92%) who were in agreement, the study,

therefore, concludes that there was behaviour change as result of implementing ABC at the GIPF.

5.5.3 Introduction of TDABC

There was a realisation that traditional ABC was now fading. The initial efforts to introduce TDABC were conducted by Robin Cooper (Kaplan & Anderson, 2003). The literature review on this issue is covered in paragraph 2.6.11 of chapter 2 of this study. The results for this item are discussed and presented in paragraph 4.7.3 of chapter 4 of this study. The data analysis presented in figure 36 in chapter 4 shows that sixteen respondents evaluated this issue very high, two chose to be neutral, while five respondents ranked it high. Based on these results, the study, therefore, concludes that there was a need to create a new ABC system.

5.5.4 Process and procedure re-engineering

Chanassad *et al.* (2014) argue that a time-driven ABC system allows companies to incorporate specific features of preference such as order processing, processes, supplies and customers, while allowing for the visibility of process efficiency and capacity utilisation. Time-driven ABC allows management to manage future demand. Management can forecast future resources using predicted order quantities and complex customer relationship management. The literature review on this issue is covered in paragraph 2.6.11 of chapter 2 of this study. The results for this item are discussed and presented in paragraph 4.7.4 of chapter 4 of this study. The data analysis presented in figure 37 in chapter 4 shows that fifteen respondents evaluated this issue very high, one chose to be neutral, while six respondents ranked it high. With a total of 21 respondents (95%) who were in agreement that there was a need

for process and procedure for the upgrading of the ABC system, the study, therefore, concludes that the implementation assisted the GIPF to identify areas of improvement.

5.5.5 Comparison of the traditional approach with ABC

5.5.6 Effective cost management

Van Damme and Van der Zon (1999) argue that an ABC system allows companies to effectively manage costs. Time-driven ABC allows management to manage future demands. Management can forecast future resources using predicted order quantities and complex cost analysis. The literature review on this issue is covered in paragraph 2.6.11 of chapter 2 of this study. The results for this item are discussed and presented in paragraph 4.8.1 of chapter 4 of this study. The data analysis presented in figure 38 in chapter 4 shows that 17 respondents evaluated this issue very high, two respondents chose to be neutral, while five respondents ranked it high. With a total of 22 respondents (92%) who were in agreement with the notion that ABC leads to effective cost management, the study, therefore, concludes that ABC helped the GIPF to effectively manage its costs.

5.5.7 Cost of service provision

Buñi (2014) claims that the ABC system allows for better pricing since ABC reveals costing information that differs among product specifications. This makes it easier to price products and services based on their specifications (Haroun, 2015; Blocher *et al.*, 2008; Liu *et al.*, 2008). The literature review on this issue is covered in paragraph 2.7 of chapter 2 of this study. The results for this item are discussed and presented in paragraph 4.8.2 of chapter 4 of this study. Figure 39 in chapter 4 shows that 19

respondents evaluated this issue very high, while five respondents ranked it high. With all 24 respondents in agreement, the study, therefore, concludes that ABC helped the GIPF to determine the cost of providing services to its members.

5.5.8 Cumbersome budgeting

It has been claimed that ABC makes budgeting cumbersome (Heany, 2004). The ABC system is accused of focussing on current costs (Liu *et al.*, 2008). However, the above studies found that, after the introduction of ABC at OUSL and CPS, there was marked improvement in the budgeting process. The literature review on this issue is covered in paragraph 2.3 of chapter 2 of this study. The results for this item are discussed and presented in paragraph 4.8.3 of chapter 4 of this study. Figure 40 in chapter 4 shows that 20 respondents disagreed, while five respondents ranked it high. Based on these results that show that 80% of the respondents indicate that the introduction of ABC did not lead to a cumbersome budgeting process, the study, therefore, concludes that ABC helped the GIPF to improve its budgeting process.

5.5.9 Increase in service delivery

Continuing budget pressure is forcing institutions to reconsider their service delivery models (Metaxiotis, 2005; Tuominen, 2012). A number of institutions are now required to develop initiatives that lead to cost reduction and the improvement of efficiency in service delivery (Kaszubski & Ebben, 2005). The literature review is extensively covered in paragraph 2.4 of chapter 2 of this study. Discussions of the results are presented in paragraph 4.8.4 of chapter 4 of this study. Figure 41 in chapter 4 shows that 19 respondents agreed, while one respondent ranked it very high. However, three respondents decided to remain neutral. Based on these results

that show that 83% of the respondents indicated that the introduction of ABC led to an increase in service delivery, the study, therefore, concludes that ABC helped the GIPF to improve its service model.

5.5.9 Accounting for strategic planning activities

Cost accounting information is required by management for strategic decision-making including product pricing decisions. Activity-based costing is also associated with a good structure that allows easy information tracking, information sharing and problem-solving (Kaszubski & Ebben, 2005). The literature review is extensively covered in paragraph 2.4 of chapter 2 of this study. A discussion of the results is presented in paragraph 4.8.5 of chapter 4 of this study. Figure 42 in chapter 4 shows that 19 respondents strongly agreed, while four respondents ranked it high. However, two respondents decided to remain neutral. Based on these results that show that 92% of the respondents indicated that ABC led to ease of accounting for activities in the strategic plans, the study, therefore, concludes that ABC helped the GIPF to account for activities contained in its strategic plan.

5.5.10 Management reporting

It has been claimed that the traditional costing methods provide distorted cost information. The system is further accused of failure to take into account the different complexities, activities scope and the actual resource consumption by activities (Haroun, 2015). The shortcomings of the traditional methods deny management the provision of accurate cost information.

The literature review was extensively covered in paragraph 2.4 of chapter 2 of this study. Discussions of the results were presented in paragraph 4.8.6 of chapter 4 of this study. Data analysis of this item is presented in figure 43 of chapter 4 which shows that 19 respondents strongly agreed, while four respondents ranked it high. However, two respondents decided to remain neutral. Based on these results that show that 92% of the respondents agreed, the study, therefore, concludes that ABC helped the GIPF to generate accurate management reports.

5.6 Benefits of TDABC to the GIPF

5.6.1 Estimation of cost per unit

The literature review was extensively covered in paragraph 2.10.3 of chapter 2 of this study. A discussion of the results was presented in paragraph 4.9.1 of chapter 4 of this study. Data analysis of this item as presented in figure 44 in chapter 4 shows that 23 respondents agreed, while one respondent decided to remain neutral. Based on these results that show that 96% of the respondents agreed, the study, therefore, concludes that TDABC helped the GIPF to correctly estimate costs per unit of capacity.

5.6.2 Maximisation of internal capacity resources

The literature review is extensively covered in paragraph 2.10.3 of chapter 2 of this study. A discussion of the results is presented in paragraph 4.9.2 of chapter 4 of this study. Data analysis of this item as presented in figure 45 in chapter 4 shows that 17 respondents strongly agreed, five agreed, while three respondents decided to remain neutral. Based on these results that show that 88% of the respondents indicated that

TDABC enabled the GIPF to maximise its internal capacity resources, the study, therefore, concludes that ABC helped the GIPF to maximise its capacity resources.

5.6.3 Accurate cost driver estimates

The literature review is extensively covered in paragraph 2.10.3 of chapter 2 of this study. A discussion of the results is presented in paragraph 4.9.3 of chapter 4 of this study. Data analysis of this item as presented in figure 46 in chapter 4 shows that one respondent strongly agreed, 20 agreed, while one respondent decided to remain neutral. Based on these results that show that 95% of the respondents indicated that TDABC allowed the GIPF to identify accurate cost drivers, the study, therefore, concludes that TDABC helped the GIPF to accurately identify cost drivers.

5.6.4 Improved process and member satisfaction

The literature review is extensively covered in paragraph 2.10.3 of chapter 2 of this study. A discussion of the results is presented in paragraph 4.9.4 of chapter 4 of this study. The data analysis of this item as presented in figure 47 in chapter 4 shows that one respondent strongly agreed, 20 agreed, while two respondents decided to remain neutral. Based on these results that show that 96% of the respondents indicated that TDABC allowed the GIPF to improve its processes and member satisfaction, the study, therefore, concludes that TDABC helped the GIPF to improve its processes and member satisfaction.

5.6.5 Estimation of unit times

The literature review is extensively covered in paragraph 2.10.3 of chapter 2 of this study. A discussion of the results is presented in paragraph 4.9.5 of chapter 4 of this

study. The data analysis of this item as presented in figure 48 in chapter 4 shows that 18 respondents strongly agreed, five agreed, while two respondents decided to remain neutral. Based on these results that show that 96% of the respondents indicated that TDABC allowed the GIPF to improve its estimation of unit time for activities and capacity resources, the study, therefore, concludes that TDABC helped the GIPF to improve its estimation of unit times.

5.6.6 Identification of operational and strategic improvements

The literature review is extensively covered in paragraph 2.10.3 of chapter 2 of this study. A discussion of the results is presented in paragraph 4.9.6 of chapter 4 of this study. The data analysis of this item as presented in figure 49 in chapter 4 shows that 18 respondents strongly agreed, five agreed, while two respondents decided to remain neutral. Based on these results that show that 96% of the respondents indicated that TDABC allowed the GIPF to improve its identification of operational and strategic improvements, the study, therefore, concludes that TDABC helped the GIPF to improve its identification of operational and strategic improvements.

5.6.7 Cost reporting

The literature review is extensively covered in paragraph 2.10.3 of chapter 2 of this study. A discussion of the results is presented in paragraph 4.9.7 of chapter 4 of this study. The data analysis of this item as presented in figure 50 in chapter 4 shows that 17 respondents strongly agreed and six agreed. Based on these results that show that all 23 respondents agree that TDABC allowed the GIPF to improve cost reporting, the study, therefore, concludes that TDABC helped the GIPF to improve cost reporting.

6 Recommendations

This section covers a number of recommendations emanating from the findings of the study as presented in chapter 4. Furthermore, recommendations are also derived from the conclusions as discussed in this chapter. The recommendations cover two areas: the first category is related to the findings, while the second relates to further research opportunities.

6.1 Consultations

The study noted that respondents were from different departments of the GIPF as well as being at different organisational levels. The study did not have a section that sought to determine whether there were consultations between management and staff members. However, respondents chose to be neutral regarding consensus with ABC objectives and the evaluation of the cost of ABC implementation versus the benefits of ABC might serve as an indication of the lack of internal consultations. The study, therefore, recommends that organisations should consult their employees prior to adoption. It is believed that this may increase the rate of success through the elimination of fear for change.

6.2 Dedicated ABC system

The success of any system change project should be managed by a core team. This should be composed of technical representatives from all departments. The study recommends that the team should include employee representatives. Furthermore, the team must be headed by a senior manager of appropriate experience and authority. The team must also be approved by a board of directors. The board of directors must

provide the team with clear terms of reference (TOR). The names, TORs and authority of the team must be circulated to all departments.

6.3 Impart ABC knowledge

The study recommends that, prior to any adoption or implementation, management must disseminate information about ABC as a management control tool. The system must be fully explained to all employees, including its objectives and aims, management's objectives for adopting the system and the benefits and requirements for success. The information dissemination process must explain how every employee contributes to the whole process during and after implementation.

6.4 ABC training

For the success of an ABC system, the users and support teams need to be well informed about the technical issues of implementation, application and reporting of the ABC system. The study recommends that detailed training should be provided to all users and support staff.

6.5 ABC consultants

A number of studies have shown that the high costs of consultants can, in some cases, be a barrier to the adoption of an ABC system. This study recommends that management should first establish the overall costs of utilising consultants before commencing with the implementation process. This will enable management to reduce any negative impact of costs since they would have been budgeted for and sourced accordingly.

6.6 Measurement of benefits

A number of respondents in the study confirmed the benefits that emanate from the implementation of an ABC system or TDABC system. The study observes that those benefits are based on the respondents' perceptions. The study, therefore, recommends that those benefits must be measured in order to establish the true success of implementation.

6.7 Post-implementation review

The study recommends continuous post-implementation reviews in order to ensure that the system continues to meet management's needs. This will allow management to take corrective actions where necessary.

6.8 Further research areas

6.8.1 Use of large samples

The study notes that a very small population and sample was used. The study, therefore, recommends that similar studies should be undertaken using a large population and a large sample. It is further recommended that these studies should make use of both quantitative and qualitative research methodologies.

6.8.2 Sector-wide studies

In line with the use of large samples and different research methodologies, the study recommends that further studies should be based on specific service sectors such as banking, transport, pension fund and the insurance sectors.

6.8.3 Comparative studies

In addition to the above recommendations in paragraphs 6.7.1 and 6.7.2, the study recommends that comparative studies be undertaken. These studies would either be region-based or country-based, for example, comparing the adoption of ABC in southern Africa with that in central Africa. Alternatively, the studies may compare the adoption in, say, Namibia and Mozambique.

6.8.4 Measurement of specific claims

The success stories have been narrative in nature. For example, behaviour change, improvement in cost reporting and consultants' costs should be measured as part of determining the success or failure of the implementation of an ABC system.

7 Summary and final conclusion

The aim of chapter five was to present the conclusions and recommendations based on the findings of the study as discussed in chapter 4. The study concluded that six perceived barriers negatively affected the implementation of ABC at the GIPF. The concerned barriers were as follows: resistance to change; time consumption; identification of cost drivers; high costs of external consultants; giving high priority to other projects; and the amount of work involved in implementing ABC.

In assessing the effectiveness of the implementation process, the following outcomes were ranked high: accurate cost allocation; improved performance measurement; cost reduction efforts; better decision-making; customer satisfaction; elimination of waste; budgetary control; and improvement in the budgetary process.

The study, therefore, concluded that the implementation of ABC at the GIPF was effective.

Part of evaluating a system's effectiveness and success is the requirement to evaluate its provision for upgrades. Three of four items were ranked high. The study, therefore, concluded that the implementation and the provision for upgrade was a success. ABC was found to be a better system compared to traditional costing methods.

Furthermore, the study found that the GIPF had enjoyed the benefits of TDABC implementation. These benefits included the estimation of cost per unit, maximisation of internal capacity, cost driver estimates, identification of operational and strategic requirements and an accurate cost reporting system.

References

- Albright, T. & Lam, M. (2006). Managerial accounting and continuous improvement. *Journal of Managerial Issues*, 18(1), 157-174.
- Bakke, N.A. & Hellberg, R. (1991). Relevance lost? A critical discussion of different cost accounting principles in connection with decision making for both short and long term production scheduling. *International Journal of Production Economics*, 24(1-2), 1-18
- Berts, K. & Kock, S. (1995). Implementation considerations for Activity-Based Cost System in service firms: The unavailable challenge. *Management Decision*, 33(6), 57-63.
- Bhimani, A., Horngreen, C.T., Datar, S.M. & Rajan, M.V. (2012). *Management and cost accounting* (5th ed.). London, England: Pearson Education Limited.
- Blocher, E., Stout, D.E., Cokins, G. & Chen, K. (2008). *Cost management: a strategic emphasis* (4th ed.). Irwin McGraw-Hill.
- Bordens, K.S. & Abbot, B.B. (2005). *Research design and methods* (6th ed.). San Francisco: McGraw-Hill.
- BPP. (2015). *Advanced performance management*. ACCA.
- Bragg, S. (2016). *Cost accounting fundamentals* (5th ed.). Colorado, CO: AccountingTools, Incorporation.
- Bufo, E. (2014). *Designing an Activity-Based costing system for a speciality retail store*. Master's Thesis, University of Oulu, Department of Accounting.
- Burnet, P.G. (2009). An improved set of standards for finding cost-effectiveness analysis. *Medical Care*, 47(7), 582-588.
- Cannavacciuolo, L., Illario, M., Ippolito, A. & Ponsiglione, C. (2015). An activity

- based costing approach for detecting inefficiencies of healthcare processes. *Business Process Management Journal*, 21(1), 55-79.
- Chanassad, A.P., Rattanamanee, W., Chaiprapat, S. & Yenradee, P. (2014). A fuzzy time-driven activity-based costing model in an uncertain manufacturing. *Public Money and Management*, 34(4), 1949-1959.
- Chea, A.C. (2011). Activity based costing system in the service sector: a strategic approach for enhancing managerial decision making and competitiveness. *International Journal of Business and Management*, 6(11), 3-10.
- CIMA. (2008). Activity based management - an overview. *CIMA*, 1-6.
- Cresswell, J.W. (2009). *Research design; qualitative, quantitative and mixed methods approaches* (3rd ed.). London, England: SAGE.
- Cooper, R. & Kaplan, R. (1991). Profit priorities from activity-based costing. *Harvard Business Review*, May/June, 69(3), 130-135.
- De Vaus, D.A. (2006). *Research design in social research*. London, England: SAGE.
- Dunne, P.M. & Wolk, H.I. (1977). Marketing cost analysis: A modularized contribution approach. *Journal of Marketing*, 41(3), 83-94.
- Eggers, J.L. & Bangert Jr, C.E. (1998). Activity based costing. *American Water Works Association*, 90(6), 63-69.
- Englund, H. & Gerdin, J. (2008). Transferring knowledge accross sub-genres of ABC implementation. *Management Accounting Research*, 19(1), 149-162.
- Fadzil, F.H. & Rababah, A. (2012). Management accounting change: ABC adoption and implementation. *Journal of Accounting and Auditing: Research and Practice* 2, 2012, 1-17.
- Fortin, A., Haffaf, H. & Viger, C. (2007). The measurement of activity based

- costing and its determinants: A case study within Canadian Federal Government Organizations. *Accounting Perspectives*, 6(3), 231-262.
- Ghauri, P. & Gronhaug, K. (2010). *Research methods in business studies*. (4th ed.). Harlow: Prentice Hall.
- Gosselin, M. (1997). The effect of strategy and organizational structure on the adoption and implementation of activity-based costing. *Accounting, Organizations, and Society*, 22(2), 105-122.
- Government Institutions Pension Fund. (2013). *Annual Report 2013*. Windhoek, Namibia: GIPF.
- Graziano, W.G. & Schroeder, D.A. (2010). *The Oxford handbook of prosocial behaviour*. London: United Kingdom, Oxford University Press.
- Gunasekaran, A., Williams, H.J. & McGaughey, R.E. (2005). Performance measurement and costing systems in new enterprises. *Technovation*, 25, 523-533.
- Gunasekaran, A. (1999). A framework for the design and audit of an activity based costing system. *Managerial Auditing Journal*, 14(3), 18-127.
- Haroun, A.E. (2015). Maintenance cost estimation: Application of activity based costing as a fair method. *Journal of Quality in Maintenance Engineering*, 21(3), 258-278.
- Heany, M. (2004). Easy as ABC? Activity-based costing in Oxford University Library Services. *The Bottom Line*, 17(3), 93-97.
- Heppner, P.P., Kivlighan, D.M. & Wampold, B.E. (2008). *Research design in Counselling* (3rd ed.). London, United Kingdom: Thomson Learning Inc.
- Innes, J., Mitchel, F. & Sinclair, D. (2000). Activity based costing in the U.K.'s largest companies: A comparison of 1994 and 1999 survey results. *Management Accounting Results*, 11, 349-362.

- Kantor, J. & Maital, S. (1999). Measuring efficiency by product group: Integrating DEA with activity-based accounting in a large mideast bank. *Institute for Operations Research and the Management Science*, 29(3), 27-36.
- Kaplan, R.S., & Anderson, S.R. (2004). Time driven activity based costing. *Harvard Business Review*, 82(11), 136-154.
- Kaplan, R. & Anderson, S. (2007). Time-driven activity-based costing. *Harvard Business Review*, 82(11), 136.
- Kaszubski, M.A. & Ebben, S. (2005). Using activity based costing to implement behavioural cost initiatives successfully. *Journal of Facilities Management*, 3(2), 184-192.
- Liu, L.Y., Mitchell, F. & Robinson, J. (2008). A longitudinal study of the doption of an activity based planning system in the Crown Prosecution Services of England and Wales, United Kingdom. *Journal of Accounting and Organizational Change*, 4(3), 318-342.
- Lucey, T. (2009). *Costing* (7th ed.). Hampshire: Cengage Learning EMEA.
- Maskell, B. (1988). Relevance regained - an interview with professor Robert S. Kaplan. *Management Accounting*, 66(8), 38-42.
- Metaxiotis, K. (2005). Leveraging expect systems technology to improve service industry. *European Business Review*, 17(3), 232-241.
- Mortaji, S.T., Bagherpour, M. & Mazdeh, M.M. (2013). Fuzzy time - driven activity-based costing. *Engeering Management Journal*, 25(3), page numbers?.
- Needy, K.L., Nachtmann, H., Roztock, N. & Warner, R.C. (2003). Implementing activity based costing in small manufacturing firms: A field study. *Engineering Management Journal*, 15(1), 3-10.

- Neves, J.C. & Justo, S. (2007). Strategic implications of accounting systems for the European Road Freight Haulage sector. *International Journal of Transport Economics*, 43(3), 429-455.
- No, J.J. & Kleiner, B.H. (1997). How to implement activity based costing. *Logistics Information Management*, 10(2), 68-72.
- Pierce, B. & Brown, R. (2006). Perceived success of activity based costing system: Activity based costing and traditional systems compared. *Journal of Applied Accounting Research*, 8(1), 108-161.
- Pike, R.H., Tayles, M. & Abu Mansor, N.N. (2011). ABC User satisfaction and types of system: A research note. *The British Accounting Review*, 43(1), 65-72.
- Piper, J.A. & Walley, P. (1990). Testing ABC logic. *Management Accounting*, 68(8), 37-38.
- Raz, T. & Elnathan, D. (1999). Activity-based costing for projects. *International Journal of Project Management*, 17(1), 61-67.
- Rundora, R. & Selesho, J. (2014). Determinants of and barriers to the adoption of activity - based costing for manufacturing SMEs in South Africa's Emfuleni Municipality. *Mediterranean Journal of Social Sciences*, 5(3), 30-35.
- Rundora, R., Ziemerink, T. & Oberholzer, M. (2013). Activity based costing in small manufacturing firms: South African study. *The Journal of Applied Business Research*, 29(2), 485-498.
- Sarath, D. (2008). Activity-based costing and process benchmarking. *Benchmarking: An International Journal*, 15(2), 137-147.
- Sartorius, K., Eitzen, C. & Kamala, P. (2007). The design and implementation of

- activity based costing (AB): A South African survey. *Meditari Accountancy Research*, 15(2), 1-21.
- Seal, W., Garrison, R.H. & Noreen, E.W. (2012). *Management accounting* (4th ed.). Berkshire, England: McGraw-Hill Education.
- Sekaran, U. & Bougie, R. (2010). *Research methods for business* (5th ed.). West Sussex, United Kingdom: John Wiley.
- Shield, M.D. & Young, S. (1989). A Behavioural model for implementing. *Journal of Cost Management*, 17-27.
- Stevenson, T.H. & Cabell, D.W. (2002). Integrating transfer pricing and activity-based costing. *Journal of International Marketing*, 10(4), 77-78.
- Stouthuysen, K., Schierhout, K., Roodhooft, F. & Reusen, E. (2014). Time driven activity based costing for public service. *Public Money and Management*, 34(4), 239-296.
- Stratton, W.O., Desroches, D., Lawson, R.A. & Hatch, T. (2009). Activity-based costing: Is it still relevant? *Management Quarterly*, 10(3), 31-40.
- Strydom, H., Fouche, C.B. & Delport, C.S.L. (2002). *Research at grass roots* (2nd ed.). Pretoria: Van Schaik.
- Suen, H.K. & Ary, D. (2014). *Analyzing quantitative behavioral observation data*. New York: Psychology Press.
- Thyssen, J., Israelsen, P. & Jorgensen, B. (2006). Activity based costing as a method of for assessing the economics of industrialisation: A case study and beyond. *International Journal of Production Economics*, 103(1), 252-270.
- Tuominen, A. (2012). *Activity based costing in cost management: The impact of KONE PSR on sales overhead costs*. Ammattikorkeakoulu: Laurea.
- Turney, P.B. & Stratton, A.J. (1992). Using ABC to support continuous improvement. *Management*, 46-50.

- Van Damme, D.A. & Van der Zon, F.L. (1999). Activity based bosting and decision support. *The International Journal of Logistics Management*, 10(1), 71-82.
- Weather, C.P. & Cook, P.A. (2000). *Using statistics to understand the environment*. New York, NY: Routledge Publishing.
- Zikmund, W.G. (2000). *Business research methods*. Fort Worth, TX: Routledge Publishing.

Appendices

A. Questionnaire

Dear Participants,

I am currently registered for the degree Master of Science in Accounting & Finance at the University of Namibia. The title of my thesis is: “Evaluating the implementation of Activity-Based Costing at Government Institutions Pension Fund (GIPF) in Namibia”. The research seeks to evaluate whether the implementation of ABC was effective and to determine the benefits, barriers and change that has been achieved and also why GIPF preferred to adopt ABC. To ensure the validity and reliability of results, I request your participation in this project by completing the attached questionnaire and returning it to me in the enclosed envelope.

Should you have any queries regarding the project or the questionnaire, please feel free to contact me on 081 249 0950 or email: MHitiraukunga@gipf.com.na, or my supervisor, Prof Merwe Oberholzer at +27 83 564 3391 respectively.

Your participation would greatly be appreciated and I look forward to receiving your completed questionnaire. GIPF’s management has given consent that this investigation can be executed.

The undersigned is prepared to guarantee the confidentiality of any information supplied by you at all times, and that information contained in the conclusion of this

study will only disclose aggregated results such as averages, inclinations and tendencies.

Thanking you in anticipation of your cooperation.

Yours faithfully

Marcello K Hitiraukunga

MSC STUDENT

Before answering the questions that follow please read the following definition of ABC.

Activity-based costing (ABC) is a costing approach that assigns resource costs to cost objects based on the activities performed for the cost object. The premise of the costing approach is that a firm's products or services are a result of activities and activities use resources which incur costs. This method identifies the activities performed, traces costs to these activities and then traces the costs of activities to products or services according to activities consumed. It provides a more accurate product costing than traditional costing.

Time-driven activity-based costing (TDABC) uses a resource capacity which in this case is "time" to measure the demand on any given activities.

SECTION A: General Questions

1. How long have you been employed by GIPF?

0-2yrs	2-5yrs	5-10yrs	10-20yrs	>20yrs
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2. In which department are you working?

Departments	Tick
CEO's Office	
Operations	
Finance	
Information System	

Human Resources	
Internal Audit	
Marketing & PR	
Investments	

3. What is your position in terms of hierarchy level?

Hierarchy level	Tick
Entry level (Assistants, Administrators)	
Supervisory - Middle-management (Accountants, Senior Admin)	
Management (Manager, General Manager)	

SECTION B: Perceived barriers impeding the adoption of ABC.

What problems did GIPF encounter or expect to encounter during the implementation of ABC? Please circle one answer only in the boxes provided.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. High cost of implementing ABC	1	2	3	4	5
2. Resistance to change	1	2	3	4	5
3. Involves a great deal of work	1	2	3	4	5
4. It is time consuming	1	2	3	4	5
5. Lack of top management support	1	2	3	4	5

6.	Lack of cooperation and commitment among departments	1	2	3	4	5
7.	Lack of knowledge concerning ABC	1	2	3	4	5
8.	Problems in defining cost drivers	1	2	3	4	5
9.	Problems in identifying activities	1	2	3	4	5
10.	High cost of consultations	1	2	3	4	5
11.	A higher priority of other changes or projects	1	2	3	4	5

1=strongly disagree, 2=disagree, 3=Neutral, 4=Agree and 5= strongly agree

SECTION C: Effective implementation of ABC.

Was ABC implemented effectively and to what extent was it ineffectively implemented? Please circle one answer only in the boxes provided.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. Accurate cost allocation to activities/functions	1	2	3	4	5
2. Reduces cost to serve of the member	1	2	3	4	5
3. Improved performance measurement	1	2	3	4	5
4. Assistance in cost-reduction efforts	1	2	3	4	5
5. Better decision-making and execution	1	2	3	4	5
6. In Your opinion, was ABC implementation effective?	1	2	3	4	5
7. Increased internal customer satisfaction	1	2	3	4	5

8. Elimination of waste by providing visibility of non-value-added activities	1	2	3	4	5
9. Overall, GIPF's ABC initiative has been successful	1	2	3	4	5
10. Better budgetary control on cost	1	2	3	4	5
11. ABC has effectively increased the GIPFs budgeting process	1	2	3	4	5

1=strongly disagree, 2=disagree, 3=Neutral, 4=Agree and 5= strongly agree

SECTION D: Experiences regarding practical issues of ABC within GIPF:

Please circle one answer only.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. Top management has provided adequate resources to ABC initiative	1	2	3	4	5
2. ABC is tied to the competitive strategies of the GIPF	1	2	3	4	5
3. There has been consensus about the objectives and aims of ABC	1	2	3	4	5
4. The objectives and purpose of the ABC implementation were clearly stated and understood by both designers and users	1	2	3	4	5
5. The top management are/ were committed to use the ABC information as the basis for decision	1	2	3	4	5

making					
6. Adequate training is/was provided for implementing ABC	1	2	3	4	5
7. ABC benefits have exceeded the cost of implementing it	1	2	3	4	5

1=strongly disagree, 2=disagree, 3=Neutral, 4=Agree and 5= strongly agree

SECTION E: What measures and requirements are available to upgrade ABC?

Please circle one answer only.

1=strongly disagree, 2=disagree, 3=Neutral, 4=Agree and 5= strongly agree

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. Need to create and implement a new improved ABC-oriented system	1	2	3	4	5
2. Need to behaviour change management	1	2	3	4	5
3. Need to introduce time-driven ABC	1	2	3	4	5
4. Need for process and procedures re-engineering	1	2	3	4	5

SECTION F: Comparing the previous/traditional costing approach with ABC:

What are the unique changes to GIPF?

Please circle one answer only.

1=strongly disagree, 2=disagree, 3=Neutral, 4=Agree and 5= strongly agree

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. Effective cost management	1	2	3	4	5
2. Cost to serve of a member easily determined	1	2	3	4	5
3. Budgeting has become cumbersome	1	2	3	4	5
4. Increase in service delivery	1	2	3	4	5
5. All activities in the strategic plan are easily accounted	1	2	3	4	5
6. Improve management reporting on budget analysis	1	2	3	4	5

SECTION G: How will time-driven ABC benefit the pension fund?

Please circle one answer only.

1=strongly disagree, 2=disagree, 3=Neutral, 4=Agree and 5= strongly agree

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. Estimating the cost per time unit of capacity	1	2	3	4	5
2. Maximize internal capacity and resources	1	2	3	4	5
3. More accurate cost-driver estimates	1	2	3	4	5
4. Improve processes and member's satisfaction	1	2	3	4	5
5. Estimating the unit times of activities	1	2	3	4	5
6. Help Fund to identify operational and strategic improvements	1	2	3	4	5

7.	Analyzing and reporting costs	1	2	3	4	5
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Thank you very much for your participation.

Yours Sincerely,

Marcello Kautora Hitiraukunga (MSC Researcher)