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## FACULTY OF COMMERCE

### DEPARTMENT OF ACCOUNTING

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#### APPROVAL FORM

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The undersigned certify that they have supervised the student Rumbidzai Chirewo's dissertation entitled **"An analysis of the effectiveness of the use of prepaid meters as a revenue management tool. A case study of Zimbabwe Electricity Transmission and Distribution Company ( ZETDC) (2012-2014)"** submitted in partial fulfilment of the requirements of the bachelor of Commerce Accounting Honours Degree at the Midlands State University.

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#### Release Form

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## **DEDICATIONS**

This academic research is dedicated to my family for their encouragement and support. Special mention goes to my late parents for they are my source of inspiration. May their souls rest in eternal peace.

## **ACKNOWLEDGEMENTS**

A heartfelt acknowledgement goes to my supervisor, Mr Mazhindu. He assisted me in producing this research into a meaningful document. I thank Zimbabwe Electricity Transmission and Distribution Company for its tireless support. Many thanks be extended to my family and friends for their assistance, motivation and support throughout the whole of my research.

## **ABSTRACT**

This research study is designed to make a sound investigation into the use of prepaid meters by Zimbabwe Electricity Transmission and Distribution Company as a revenue management tool. The nature of the research aimed in identifying and evaluating the revenue management policy of the company in place, the implementation guidelines and personnel capabilities, challenges being faced in the revenue management, controls that have been put in place over revenue management and coming up with the best practice for revenue management of the company. The research was conducted using the descriptive method and the stratified random sampling technique. Questionnaires and interviews were used to obtain and collect data. Primary and secondary data was obtained that relates to the nature of the research study and combined findings were presented by the use of charts, graphs and tables. Data analysis was done using the mean, mode and median. Summaries of every chapter, conclusions and recommendations were also presented.

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## **LIST OF ACRONOMYS**

**ZESA :** Zimbabwe Electricity Supply Authority

**ZETDC :** Zimbabwe Electricity Transmission and Distribution Company

# CHAPTER 1

## INTRODUCTION

### 1.0 Introduction

This chapter contains the background of the study, statement of the problem, main topic, sub-research question, research objectives to conduct the research, significance of the study, delimitations, limitations, assumptions, abbreviations and summary.

### 1.1 BACKGROUND OF THE STUDY

Zimbabwe Electricity Transmission and Distribution Company (ZETDC) a subsidiary of ZESA Holdings was incorporated in June 2006. The company operates in the Electricity Supply Industry in which it solely operates despite provisions by the New Electricity Act (chapter 13: 19) which allows other independent power producers to come on board in the electricity production.

Since its incorporation the company used the conventional billing system before the introduction of prepaid meters which posed a lot of challenges. Customers refused to pay their bills, arguing ZESA's billing system. ZESA's deputy spokesman, Mr Mandizvidza reported in the Megawatt bulletin of November 2012 that ZESA was owed more than US \$600 million approximately 60% by domestic and 40% by commercial consumers which the company desperately needed to maintain infrastructure. As a result of this ZESA also struggled to settle its foreign debts as illustrated by the increasing amount of foreign debt year after year in the table below.

**Table 1.1: Foreign debt trend**

	31.12.2010	31.12.2011	31.12.2012
Foreign debt	\$598 201 000	\$658 882 000	\$762 155 000

Source ; ZETDC Monthly Financial Performance Reviews

The company then embarked on a prepayment metering project towards the end of the third quarter of 2012. The Minister of Energy and Power Development, Elton Mangoma stated in the Herald of October 2012 that , “ the objective of the installations of prepaid meters is to

improve efficiency usage, ZESA's revenue flows and denting the debt consumers who owe the power utility."

The objectives of the prepaid metering seem to have come under threat after consumers started tampering with the meters. The Managing director, Mr J Chinembiri reported in the ZETDC's March 2014 bulletin that meter tampering has resulted in ZESA losing US \$10 million monthly in potential revenue since October 2013. Targeted monthly revenue is about US \$70 million but the company is getting about US \$60 million resulting in an adverse variance of approximately 10% every month against about \$900 million debt to be settled by the company. This drop in revenue has affected operations at such a time when the country is facing power shortages for it can only generate 1200 megawatts against a high demand of 2200 megawatts.

ZTE Corporation a Chinese company provided 40% of the prepaid meters required for the project. Nyamazela of South Africa 15% , locally Solahart 25% and Finmark 20%. The issue of electricity theft was from those meters installed by ZTE and the company was informed about it but the company failed to take effective corrective measures. "ZTE's contract was cancelled after they failed to remedy the situation and the cancellation was communicated to them in writing," said ZETDC senior Project engineer, Wilfred Shereni in a letter dated 18 May 2014, herald reported.

The contract was terminated and ZTE replaced 3623 meters that had been installed from the defective 5400. The fact that ZTE did not entirely eradicate the faulty prepaid meters, the same company re-installed the prepaid meters and no controls were put in place made the problem of energy theft to continue. The Herald( 8 June 2014) reported that the State Procurement Board suggested the mounting of the meters on poles to curb the issue of electricity theft. However, no procedures have been followed as yet to do so indicating that the problem is still going on.

The Sunday mail (June 29 2014 ) reports that the company also suggested the use of smart meters and do away with prepaid meters so as to stop electricity theft. However, the project looks costly to the company as it costs ZESA US \$105 to install a cash power prepaid meter and about US \$350 for a smart meter. So as yet no smart meter has been installed because of the high costs associated with it.

In the same Sunday mail of June 29 2014 the Energy and Power development ministry officials mentioned that an average of US \$10 million is being lost by the company indicating that even though management has tried to take measures and provide suggestions the issue of electricity theft is still going on.

## **1.2 STATEMENT OF THE PROBLEM**

Zimbabwe Electricity Transmission and Distribution Company is a subsidiary company of ZESA Holdings which is the sole supplier of electricity in Zimbabwe. Since its incorporation the company used the conventional billing system until the third quarter of 2012 when it embarked on the use of prepaid meters. This was done with the objective of improving efficiency usage and increasing the revenue of the company.

However, the tempering of prepaid meters by consumers is making it difficult for the company to meet its objective. This has affected revenue collection of the company as about US \$10 million is being lost monthly since October 2013 as a result of electricity theft. It is this problem that has persuaded the research to be done.

## **1.3 MAIN RESEARCH QUESTION**

An analysis of the effectiveness of the use of prepaid meters as a revenue management tool: a case of Zimbabwe Electricity Transmission and Distribution Company.

## **1.4 SUB-RESEARCH QUESTIONS**

- ❖ What is the revenue management policy at ZETDC?
- ❖ What implementation guidelines are in place?
- ❖ What personnel capabilities are in place to implement the policy?
- ❖ What challenges are being met in revenue management?
- ❖ What controls have been put in place over policy implementation?
- ❖ What is the best approach to revenue management at ZETDC?

### **1.5 Objectives of the study**

- ❖ To examine the revenue management policy at ZETDC.
- ❖ To assess the implementation guidelines in place.
- ❖ To examine personnel capabilities in place over policy implementation.
- ❖ To assess the challenges being met in revenue management.
- ❖ To examine controls in place over policy implementation.
- ❖ To evaluate the best approach to revenue management at ZETDC.

### **1.6 SIGNIFICANCE OF THE STUDY**

#### **To the researcher**

The study is done in partial fulfilment of the requirements for the Bachelor of Commerce Honours degree in Accounting of the Midlands State University.

Research skills for other research studies in the future are also acquired by the researcher because of this research.

#### **To the university**

The research can be used as reference material for the University.

#### **To Zimbabwe Electricity Transmission and Distribution Company**

Recommendations will be provided to the company out of the findings of this study for further consideration.

### **1.7 DELIMITATION OF THE STUDY**

The study is limited to Zimbabwe Electricity Transmission and Distribution Company (ZETDC) Head Office in Harare .The period under consideration is 2012 to 2014.

## **1.8 LIMITATIONS**

### **Time**

The period and time was limited as the project had to be done by the end of the semester. This limitation was countered by the use of the internet and emails to get information from the firm. The researcher also had to work for long hours.

### **Confidentiality**

Since this company is a parastatal access to information was initially limited. The researcher therefore used information from work-related learning. Confidential information was made available on grounds that data would be used strictly for academic purposes.

### **Financial Constraints**

The research faced challenges in meeting the transport expenses, the photocopying and printing. To overcome this, the researcher had to make personal financial sacrifices.

## **1.9 ASSUMPTIONS**

The study was carried out on the following underlying assumptions. There were no changes in ZETDC regulations over the period of study. The research respondents would be cooperative and give reliable information.

## **1.10 ABBREVIATIONS**

**ZETDC** : Zimbabwe Electricity Transmission and Distribution Company

**ZESA** : Zimbabwe Electricity Supply Authority

## **1.11 SUMMARY**

The chapter covered background of the study, statement of the problem, main research question, sub-research questions, objectives of the study, significance of the study, assumptions, limitations and delimitations.

## **CHAPTER 2**

### **LITERATURE REVIEW**

#### **2.0 INTRODUCTION**

The problems of revenue management have been an area of concern from time to time in the public and private sector of the business world. Various scholars have reasonably argued on this issue of managing revenue in companies. This chapter aims at giving theoretical review over revenue management policies, how they are implemented, challenges being met in implementation of these policies, controls in place and coming up with the best approach to revenue management.

#### **2.1 THEORETICAL FRAMEWORK**

The body of theoretical concerns aims at giving responses to the following set of questions; What are the revenue management policies used by companies, what implementation guidelines are in place, what challenges are being met in revenue management, what controls have been put in place over implementation of the policies and the best approach to revenue management.

##### **2.1.1 Revenue management policies**

Xuan Lorna Wang and David Bowie(2009) illustrated number of revenue management policies. He supports that most literature confirms that the core concept is to maximise revenue through three main policies which are:

- The pricing strategy policy
- Inventory control policy
- Control of availability policy

There are three main pricing strategies, cost-based pricing, customer- based pricing and competitor- based pricing. Cost-based pricing is determined by adding a profit element on the cost of making the product. Consumer bases pricing is where prices are determined by what customer are willing to pay. Competitor-based pricing is where prices set by competitors determine the price of the product.

Inventory control policy is a process of managing and locating materials. The policy also refers to software components. Control of availability policy refers to the accessibility of scarce resources or commodities. Essential commodities are mainly affected by this policy.

Many firms who employ these policies usually experience a 3 to 7 percent revenue increase without any significant capital expenditures. With such an attractive profitability potential it is easy to understand why many scholars support these policies.

Iain Grieve (1994:11) suggests that public sector organisations should take the customer service requirements at the top and distributing more of the resources to this sector in organisations. He argues that the citizen's need is of paramount importance. The government must establish a clear, direct and specific relationship with citizens in order to easily identify their needs and wants. Once these are identified the government works on providing the best service in terms of cost and quality.

If a product is able to fit its intended use the customer is satisfied. Iain Grieve (1994) states that when a customer is satisfied, revenue is certain. Loyalty to the product or service by the customer is also enhanced. Revenue is increased as well by doing so. So this is a revenue management policy that Iain Grieve did put across in valuing the citizen's need first in all parastatals. This implies that the core activity of the organisation will be the requirements by the customer and adequate resources must be channelled in that direction.

Stephen Procter and Graeme Currie(2002) suggests team work as a revenue management policy. In the more popular management literature the focus has been on the team itself and how effective teams can be created. Stephen Procter and Graeme Currie(2002) state the most common example of this approach as the Belbin's (1981, 1993) on the identification of different roles that members of a team need to take on. The most important approach and the one adopted by Currie(2002), is to place team working more squarely within the context of the employment relationship.

This approach is concerned with the employees who make up the bulk of an employing organisation. Currie goes on to state that team work is of great importance in generating revenue. This is because having a team allocation rather than individual allocation of work and by encouraging individuals to meet their team targets.

Once a target is set the team works together in reaching that target thus increasing efficiency and by doing so revenue collection is also increased. The objectives set for a team are derived from corporate objectives so once they are met it also means company objectives are met and all objectives work at generating revenue.

Employees are more willing to accept a joint responsibility for a task so team work helps in promoting efficiency and effectiveness of a job under taken thus increasing revenue as well. Stephen Procter and Graeme Currie(2002) state an example of the tax assessment and revenue collection in the United Kingdom. Inland Revenue is the United Kingdom's tax assessment and revenue collection department. The department was divided into five bands and each was given specific responsibilities derived from the one objective of assessing tax and collecting revenue in United Kingdom. It worked for Inland Revenue as tax collections increased annually after team work was introduced.

Delbridge et al(2000) however, argues on the point of team working as a revenue generating policy. Once employees are put in groups, the scope of work tend to reduce. This is because the task is further split according to the number of team members and some of the work will be too little to be spread over a number of employees. This means less work will be done for a high remuneration. Employee performance is also not easy to assess as some tasks will be done jointly so performance appraisal is affected. In addition employees exercise little in the case of new skills. Some employees tend to be reluctant when working in teams. Revenue management systems should therefore operate on individual basis.

Adrian Palmer and UnaMacMahon(2008:189-192) are of the view that the practise of revenue management through variable pricing as a revenue management policy is being used in quite a number of companies especially in service industries where fixed costs make up most of the total costs and demand is variable. Palmer goes on to say that a number of scholars have supported the fact that total revenue increases when a business abandons the use of an average pricing system to a system of price discrimination between consumers, locations and time of use.

Phillips(2005) states that price discrimination also known as price differentiation is a pricing strategy. Identical products or services are transacted at different prices by the same supplier. Price discrimination is also as equity pricing, preferential pricing and tiered pricing. Personalised pricing is selling to each customer at a different price. Group pricing is dividing the market into different groups or segments and charging the same price for each segment. Product versioning offers a product line by creating slightly different goods for the aim of price discrimination. This revenue management policy is greatly used in the airline, hotel and car rental sectors and has proved to be effective. Adrian Palmer and MacMahon(2008) state that the aim of this policy is to appropriate excess value if a customer's perceived value of a

good or service is higher than what he or she has paid. It also seeks to lower the price charged if the price of the product is higher than the consumer's valuation. This is all done so as to reach a point where a purchase would give value to the buyer.

Wolverton(2000) is of the view that reaching a best available price for a product is only practical when good forecasting techniques are in place. The review of previous year's trends and formulation of approaches to predict demand do not give a clear picture of the future. Judgements are usually used when formulating forecasts and sometimes the factors are unpredictable. Wolverton(2000) is not of the idea of using variable pricing as a revenue management policy.

### **2.1.2 Implementation guidelines**

Iain Grieve(1994) suggests a number of guidelines when implementing revenue management policies. Iain Grieve is of the view that a clear and definite pattern should be formulated on how the policy should be running. In developing this all divisions should be represented that is if the company is geographically spread over other regions then employees from the head office and regions should be involved. This helps in avoiding resistance to change of policy since everyone would take part in the formulation process.

Iain Grieve(1994) states that the launching of the policy should be done by a board member so as to set the scene. People tend to accept the change of policy if said from a higher rank. The board member should clearly explain the need to embark on the policy and give a clear picture of the positive impact of adopting the revenue management policy. Iain Grieve(1994) also suggests of the new manager required for every new policy. The board should address the management on the new skills to be developed in order to implement the new policy.

The management now has to be given materials to study on the new management revenue policy. Work-shops should be held for management to be fully schooled of the policy. For better understanding presentations can be done by the managers during the work-shops. The training should be done soon after the launch.

This gives management enough time to practise their skill and be able to relate the book content to their own working environment. During the work-shops managers should be put into teams as much of the development work takes place when team working.

After the work-shops are conducted, management are encouraged to address their own learning needs, to develop personal development plans to challenge and support each other on real work issues.

Stephen Procter and Graeme Currie(2002) also supports the fact that before engaging in to any revenue management policy management should fully understand the policy. For example if valuing the use of team working then management must have a complete picture of the structures, roles and responsibilities of teams. Personnel should understand how teams are designed and the duties expected to be done in those teams.

Management and organisation of teams should be noted. This means management should take up new roles and responsibilities as well. Management should be able to coach and organise the teams. The system of appraisal and reward should have a relationship with the team work. Understanding team working is of great importance too. The organisation's performance should link with the team work. How the team works is the most important part of teams.

Management should get a clear view of the nature of work involved in the policy to be implemented. The advantages of the policy should be spelt out as well. Currie(2002) is also in support of the fact that when implementing a policy there is need for management to obtain new skills and responsibilities. Companies can make use of pack's modules or the use of well trained external experts on the new policy. It is said to be more effective to use the modules as well as the authors to train management.

Martinez Lucio et al (2000) in examination of United Kingdom's postal service argues that the use of work-shops may not be effective as some managers take these as a refreshing avenue and not a source where effort and time should be devoted to. Kai#ingoVoigt(2008) states that conflicts will always rise from employees between the old and the new revenue management policy. Voigt(2000) is in the support that management should be fully given the benefits of taking the new policy as a strategy of implementing it.

Michael Saatmann(2008) agree with Iain Grieve(1994) on the fact that when formulating a revenue management policy employees should be involved and represented .

This reduces negative behavioural responses to the policy and it promotes effective communication when communicating the policy. It is not the policy only that will cause a change in the revenue but the complete understanding of how the policy operates.

Michael Saatmann(2008) is in support of Iain Grieve(1994) and Adrian Palmer(2008) that management should fully understand how the policy works before implementation.

Michael Saatman(2008) clearly points out that it is not by the proper formulation of a policy that makes it effective but the employee's behaviour. It is important to establish a strong relationship between employees and management. He states out the need for management to understand their subordinates so as to be aware of which management style to adopt when implementing a policy. This would help for easy adoption of the policy by the entity and thus meeting the objectives of the policy.

Cathy Burgess and Keith Bryant(2001) are of the view that whenever a company thinks of implementing a revenue management policy it needs to take notice of the costs involved in doing so. This helps to compare the costs and revenue anticipated when the policy has been implemented thus seeing if higher profits will be experienced compared to the old policy. At times the company may be opting to continue with the ongoing policy after such an assessment.

They bring across the fact of considering profitability as well and not only revenue generation. Decisions must be made on the basis of costs associated with implementing a policy. They go on to say what might appear to be a high generating revenue policy might not remain the case after costs have been considered. All support and fixed costs as well as the specific variable costs associated with the policy must be an area of concern before implementation. Donaghy et al (1995) also supports this a policy should be viewed on a profit analysis basis than revenue based only.

Burgess and Bryant(2001) also brings out an issue of complete information to be available about the policy. They state that one of the key issues when implementing a policy is the need for suitable information and availability from modern computer systems on that policy. Downie(1996) also supports Burgess and Bryant(2001)putting across the fact that when implementing a revenue policy there is great need to fully exhaust information chambers on the policy. This helps the management in understanding the policy before implementing it to the other employees. Responses are always quick to any area of concern when full information is available.

Joeng and Lambert(1999) came up with an aid when implementing revenue management policies. They bring up the point that there is need to use unsophisticated technology when

implementing a revenue policy. They go on to give more attention on accounting packages. They are of the thought that when implementing a revenue management policy the accounting packages used must be quick and easy to understand. If new technology is involved in the use of the new policy then management should be fully trained. Seminars and work- shops should be conducted until management is comfortable with the new technology.

### **2.1.3 Personnel capabilities over policy implementation**

Adeniyi(2005) is of the view that personnel should have a full understanding of the risks and capabilities involved in the system used in the implementation process. This is because there is a lot of risk involved in the recording, maintaining and reporting of data in a system. Personnel should recruit well trained and highly information technology qualified employees. This avoids recording, incomplete, invalid and inaccurate data during the use of the new revenue management policy. Management should not rotate employees at a regular basis. Maintenance of accurate information is affected. This is because the handover take over process involves irregularities that cannot be accountable for by employees.

AICPA's statement of accounting standard one (section 320.33) state that personnel must be cautious and well informed of the system it chooses for revenue management. This is because it affects the effectiveness and the efficiency of the policy. Management must be literate of the software and systems appropriate for sound revenue management.

McNally(2013) states that personnel should develop awareness, expertise and alignment over the revenue management system. This means management should be aware of the system or software being used in the policy implementation. This can be done through the use of experts to train personnel. Management should obtain and review any released publications about the new system or software. Documents, editorials, articles and other material related to the system can be of use as well.

Personnel should also conduct preliminary assessment over the system in use. The system should be assessed to note if it is complying with the current program. If variance arises investigations should take place.

Iain Grieve(1994) wrote in his journal Industrial and commercial training to design the most effective policy implementation entities have to take note of personnel capabilities. The policy must be in contemporary with the management capabilities. A policy might be clearly structured and designed but if management is not up to the task of implementing the policy then the objectives of the policy may not be met. It is of paramount importance for management to be fit for the task at hand.

Grieve(1994) suggest that it is vital to the entity for a management and personnel capacity analysis. This is when training need are identified if there be need to do so. It will enable the personnel to be capable of carrying out the policy implementation. The analysis mainly targets the senior management as they are the ones directly involved with implementing the policy. Firstly the board members should structure out what they expect management to do in the implementation process.

The expectations should be both present and for the future. This helps management in identifying its capabilities concerning the programme. The analysis should not only involve the senior management capabilities but also what is expected from their subordinates. This helps to clearly define what management should also expect from their subordinates and structure their personal implementation programme in such a way that will meet the expectations of the board members.

ZviSchwartz(2012) also agreed with Iain Grieve in his journal ,On revenue management and last minute bookings dynamics. He did put more emphasis on the fact that after the analysis is done it is of great importance that the findings are put together in a framework showing competences or things that managers should be doing within each department in relation to policy implementation. This should be structure in a manner that personnel are able to understand exactly what they need to work on concerning the process of implementing the policy.

Chih-CheinChen(2012) also supported that this helps personnel to individually identify areas they need to improve on in order to be capable to implement the revenue management policy in concern. Chen and Schwart(2008) are of the view that the more that personnel learn about what they are expected of in the implementation process, the more clearer it becomes that a standard training programme will be helpful in being capable to implement the revenue policy.

Sullivan (2009) is of the view that although training is of great importance to personnel of the same level of seniority, the work they conduct vary enormously thus the skills they require for policy implementation also differ. Therefore, training may not be of good support in trying to make personnel capable of implementing the policy. For example, a manager from the head office might be involved in drafting the policy and another from outside head office in implementing the policy over a thousand of people. Different training is required for the different managers considering their duties even though both are seniors.

Cross et al(2009) is of the view that personnel working towards common goals should be trained together. Cross is of the view that training is important in order for management to be capable of implementing the revenue policies but must be grouped by the set of objectives and not the nature of work. Stephen Burgess and Arthur Tatnall(2007) also agree on the issue of team working personnel with the same objectives.

They state that it helps personnel to become familiar with their roles and responsibilities more easily as they work jointly in understanding them. Bryant(1996) argues that grouping management according to common objectives has proved to be costly as different training programmes will have to be done for different groups. Lloyd and Newell(2000) are of the view that self management learning approach is a more better way of enabling personnel to be capable to execute their policy implementation process.

A loosely, easy to understand self-management learning programme should be structured. Personnel may be used to attending training sessions involving a lot of theory and the self-management learning programme will be new. To win personnel commitment, the board members need to clearly explain to personnel that some days will be set aside specifically to practically tackle work-related issues. By doing so management will have enough time to understand, learn and equip themselves for implementing the policy.

They go on to say packs of modules can also be used to make management to be capable to implement the policy. The modules will be given to personnel individually according to the duties expected from the manager. This will enable personnel to individually study on the area of concern. The use of external experts can be used as well. These will work with the personnel directly and help in the implementation process.

MartnezLucio et al(2000) argues on the issue of using external experts as he states that they are expensive to remunerate and may not be available when required by the company as they are experts in these areas. Work-shops should be conducted in order for personnel to be capable of executing the programme of policy implementation.

#### **2.1.4 Challenges being met in revenue management**

Within the public sector Iain Grieve(1994) outlined a number of challenges being faced in the public sector especially in United kingdom. The government is not being able to meet citizen's expectations. If a citizen is satisfied with a service or good loyalty is created and revenue from the citizen is consistent. Government especially in the BRIC countries is failing to meet requirements by citizens due financial constraints.

Iain Grieve(1994) brings out the fact that compliance with tax laws by the citizens is a challenge in the public sector. Revenue from tax is the main source in the public sector so if citizens do not comply then revenue is greatly reduced. This makes the government in continuous need of finding better ways in helping and getting the public to comply with tax laws and building confidence in the way the tax system is administered.

Grieve(1994) goes on to state the challenges of inadequate resources to generate revenue. Many industries both the public and private sector are facing this challenge. Resources are not adequate to generate as much revenue as entities anticipate. Companies end up not meeting their objectives. Kohei Asao et al(2013)wrote in their journal, build environment project and asset management that employees feel committed, skilled and appreciated they work motivated in generating revenue. The challenge of not being able to take care of staff in a way that will make them work hard to generate more revenue is in many entities. This is as a result of financial constraints which cause most of the revenue to be directed to production rather than on employees.

Jeff Coy(2006) illustrated a number of challenges in his journal Shrinking labour force is top challenge for global hospitality, tourism and service industries. The problem of attracting and retaining qualified workers is increasingly becoming a global challenge in revenue management. A number of issues have contributed to this challenge.

Blank et al (2009) states that demographics, is one of the causes of labour and skills shortage. Population growth rates have been slowing in Europe especially in the United States for quite

a long time. The number of workers leaving the workforce now is more than those entering. The workforce is aging and is moving into retirement. It is creating a huge void that can only be expected to grow larger by day. Lagging Wage Rates is also suggested a cause of labour and skills shortage(Blank et al ,2009).

Long criticized for paying salaries and wages below those expected by employees in industries, companies increasingly finding it hard to attract and retain qualified candidates willing to attract standard wages. A company's reputation also affects many entities both in the public and private sector. Highly qualified workers do not seek for employment in companies with a bad reputation especially on remuneration bases thus less qualified candidates do are available.

Findley et al (2009) also suggest that construction costs are a challenge in revenue management. All construction costs and the costs for furnishings, fixtures and equipment (FF&E) are continuing to escalate. According to the Associated General Contractors of United States construction costs, driven primarily by materials costs, are dramatically increasing. The annual increase for construction materials in general was approximately 10 percent in 2009, followed by 6.0- percent and 8.8-percent increases in 2011 and 2012.

Newell H (2000) suggest that many entities have seen the use of technology not maximizing revenue opportunities in some instances. Other systems also fail to support revenue generating systems and secure them to the extent appropriate to the value of their data and at times to the consequences of that data becoming stolen and in other instances corrupted. An important issue limiting wider adoption is the challenge of improving the systems' ease of use.

This is because as they continue to grow in functionality, in both operational and customer-facing areas. These factors support a trend to outsourcing the more complex operational functions and system security to expert, central staff, either corporate or third party. This is too costly to companies. Procter and Mueller(2000) state that has become increasingly difficult to sustain profit growth and improved return on investment performance.

For several reasons including:

- I. Rising operating costs that will outpace the growth of revenue.

- II. Increasing costs of capital and the need for reinvestment that will negatively affect revenue
- III. Increasing labour and benefits costs that are being generated by changes in demographics, government regulations and labour agreements

Procter and Currie(2008) state that there has been an explosion of new brands or products announced over the past three to four years. This expansion of product type in both the major companies and small start-ups trying to establish themselves as a brand has become an issue. Many customers are misled and revenue is limited in the major companies. This has become a great challenge in the revenue management of many companies.

Procter and Currie(2008) states that capital provides asset liquidity and enables the development of new companies. Increasing institutional investment in companies is enhancing asset values and consequently lowering returns. Expectations of revenue and profitability growth are stimulating capital availability for new development. The availability of capital has become a serious issue in revenue management of most companies in both the public and the private sector.

### **2.1.5 Controls put in place over policy implementation**

IDeaS revenue insights(2004) state that information Technology gadgets and systems have made an impact in the revenue management of most companies. The gadgets have enabled entities to quickly and efficiently carry out their operations therefore increasing revenue collection. Systems help in determining correct pricing for products and services. The systems can generate more accurate forecasts over revenue collection using the company transaction data transaction data.

IDeaS revenue management system handbook(2004) states that the systems enable to assess revenue collection on a daily, weekly or monthly basis as some systems generate revenue performance reports frequently depending on the requirements of the company. These reports help management for planning purposes. It helps in determining maximum revenue to be collected over goods sold or service provided over a certain period.

Revenue management systems integrate transactional data giving a deeper reporting capability therefore, revenue collected is easily assessed. GGFOA annual conference report(2013) suggests that although Information technology gadgets are playing a pivotal role in revenue management controls have to be put in place over these gadgets. When developing the gadgets for revenue collection, the finance department should be involves in the process as well. This is done for the department to clearly outline what is expected of the gadget or system. Its functionality should be appropriate with the requirements of revenue collection.

Joel Black and Tim Lyons(2013) suggest that usually companies outsource its system or gadgets, in such a case it is of great importance that during its development the company should send representatives to participate in this process. This helps to note if the gadget or system being developed is compatible with the revenue collection system of the company. The internal information technology department or engineering section would be the appropriate people to be involved in the development of the software, system or gadget for revenue collection purposes. If purchased from outside then the internal Information Technology department should check the gadget before its use in the company.

The Association of Accountants and financial professionals in business handbook(2013)states that it is recommendable that the company internally generate the system or software as the people involved in the development of the system would be more appropriate with the company. This is because the employees know fully the system in use, its loopholes that need attention and even the upgrades needed concerning the system. This means the system developed internally is more reliable. Macnally(2013) however, states that it is not ideal to generate a system or gadget internally as this carries forward the errors of the previous gadget or system to the new development. It takes an outside person to identify errors or problems with an ongoing system or gadget.

The use of an external party is of importance even when implementing the system or gadget for revenue collection. An expert from outside over the use of the gadget should be asked by the company to check the reliability of the gadget in collecting revenue. The expert should be independent from the people involved in the designing and development of the gadget. This helps to increase reliability over the gadget and reduce the risk involved in collection of revenue.

The COSO framework and SOX Compliance(2013) states that the revenue collected should be equal to the service provided. In developing the gadget, the software should be able to pick every transaction. The gadget should be able to show on the same face the revenue collected and service provided for comparability purposes. There is therefore need for the gadget to be tested if it is picking every transaction before being in use. The company can request for a sample to be in use for a period of time to assess the effectiveness of the gadget in relation to revenue collection.

Internal control- Internal framework(2005) states that when a company is purchasing a gadget for collecting revenue the company has to question the reliability of the supplier. A strict investigation on the supplier should be carried out. It is more advantageous to confirm with other companies acquiring from the same supplier. The reputation of the supplier from other companies is valid. It is therefore important for a company to consult from a number of companies before selecting a supplier. The number of gadgets required for revenue collection can be spread over a number of suppliers so as to reduce the risk of defaults from one supplier.

COSO internal control-internal framework executive summary(2013)state that when the gadgets have been implemented then reconciliations should be carried out. On a daily or weekly basis the company should reconcile the service provided with revenue collected. The units shown by the gadget should tally with the revenue collected. The company has to recruit an employee specifically for this task as it requires a lot of work.

The reconciliations can be carried out by an expert from outside on a weekly or monthly basis. An independent person should check the revenue collected with service provided or goods sold. The company has expected revenue to be collected or budgeted revenue to be collected. Comparisons should be done between the budgeted and actual revenue collected. Any variations should then be traced.

These reconciliations should be done frequently by the company. When financial statements are prepared, the statements showing the service provided or goods sold should be attached as well as statements showing revenue collected separately. These statements should also be prepared by different people as well. The reconciliation of the two statements should also be reconciled by a different person as well. This is done so as to objectively check and provide information.

The system should be developed in such a way that it generates a report daily or weekly showing the goods sold against revenue collected and a reconciliation statement of the two. Adeniyi(2005) states that when installing the revenue collection gadgets both the supplier and the company employees were the gadget is being installed should be present. The company should check if the gadget requested is the one being installed meeting all the requirements of the company.

The employees involved in the implementation process must be well qualified to do so. This reduces the risk of wrong installation of the gadget or system. Compliance with the finance department requests is of vital importance. The company should be fully aware of the software being used when developing the electric gadget. Its functionality, features and merits in relation to revenue collection.

Isibore(2006) states that electric gadgets are used by humans and they are prone to human tampering around with them. When companies are developing gadgets for revenue collection they should be designed in such a way that when tampered with, the company is immediately alerted. It can be designed in such a way that if tampered with the gadget can enter into a tampering mode. It becomes inactive for use until the company attend to it on its own. Secret codes can be formulated by the company to remove it from tamper mode.

This helps to reduce human interference with the revenue collection gadgets. This helps to rely on the information provided by the gadget as revenue collected or units sold. The customers should have limited to the gadget. The gadget should be directly connected with the system of the company. The system should note every transaction or activity involving the gadget. In the case of any misuse of the gadget the system should alarm it to management.

Isibore(2006) is of the view that when implementing a policy there must be controls in place over the system being used. The system should indicate when there is duplication of event data or recordings. When designing and developing the system to be used in the implementation process, auditors should be involved in the process so as to verify the accuracy of the system itself. An expert should check the system before the implementation process starts. This provides real-time reporting assurance services.

Koontz(2008) states that most companies now use information technology during the implementation process. This is mostly done to support decision processes, conduct the implementation events and to prevent and detect errors. Therefore, the revenue management system should be updated frequently to avoid any irregularities. The system should always indicate the recording, storage and reporting of every data entered.

The proper recording helps to test the effectiveness of the information technology gadgets used in the implementation process. Albania Internal Financial Control assessment report(2004)suggests that well-defined internal control policies over revenue management policies should be put in place. Documentation of the new system must be provided. Upgrading of the revenue management policy should be done frequently.

Richards (2005) states the use of application control as well such as access codes so as to provide control over the data entered into the revenue system. Application controls also help in the accuracy and completeness of information. Software acquisition and maintenance should be monitored. The software used in the revenue management system should be from a reliable supplier and should be tested by experts. This helps in ensuring proper operation of the system.

The Auditor general under the Auditor general Act of Canada states that whenever a revenue policy is being implemented specific responsibility for the performance of any duty during the implementation process should be assigned at lines of authority. The reporting structure must be clearly identified and understood. This is a form of control as accountability is enhanced. The implementation process will become more efficient and effective as lines of authority are clearly defined.

Iain Grieve(1994) is of the view that management must be capable to carry out their responsibilities in the implementation process. Therefore he suggests the selection of training personnel as a form of control. The awareness of what management is expected to do during the implementation process helps to increase effectiveness. Training through work-shops and seminars is a form of control in the implementation process.

Policy on internal control, Treasury Board of Canada(2009) suggest that the segregation of functions or activities during the implementation process is a form of control. Personnel with common functions should be grouped together.

Incompatible tasks should not be assigned under the same personnel. This increases efficiency and effectiveness during the implementation process. The legislation, formulation, training of personnel and implementation should be segregated as a form of control. Controls should be put in place as well over the procedures of implementing the policy.

Iain Grieve(1994) brings out the issue of supervision. It is an effective control over policy implementation. Management should carry out tight supervision over every stage of the implementation process. This should be done frequently by personnel as individuals tend to do their work more seriously when an eye is looking at them. This improves the quality of work done as well as compliance to what management is expecting from their subordinates. The board members should also carry out strict supervision on management.

This also helps management to remain focused on what is expected of them by the board members during the implementation process. Wang and Bowie(2009) suggest that reviews should be taken after every stage of the implementation process. This control enhances employees to carry out their tasks thoroughly as they know that reviews of work done would be carried out after each stage of implementation. They also encompass the use of comparison of work as a control over policy implementation.

Comparisons should be done between the policy implementation framework and what is done during the implementation process. Any variances that arise should be thoroughly investigated and appropriate action must be taken. Burgess and Tatnall(2007) are of the view that it is not adequate to place controls over the policy implementation process. The controls must be constantly upraised to enhance their effectiveness. The controls must be assessed frequently to ensure its effectiveness.

### **2.1.6 The best approach to revenue management**

Cathy Burgess and Keith Bryant(2001) state that many scholars use the term revenue management interchangeably with yield management. A number of approaches have been formulated as the best to revenue management. Jauncey et al (1995) brings out the approach that a policy should be systematic, continuous and integrated so as to maximise revenue. Jauncey et al(1995) state that early approaches targeted entities as a whole so he is of the view that revenue management should be done on segmentation level.

Bryant(2000) states that this approach to revenue management is informal and fairly unscientific but is the approach mostly used by companies. The father of revenue management Eric Orkin(1990) did put across his approach of using revenue management calculations as a way of identifying gaps in entities where if filled productivity would increase. Orkin is in agreement with Jauncey et al (1995) that segmentation is the best revenue management approach but only in the context of price-sensitivity.

Cross(1997) suggests the application of disciplined tactics that predict consumer behaviour at the micro-market level that will maximise product availability and price as the best approach to revenue management. He carried out studies on a number of industries especially airlines. These industries have proved to have increased their revenue generation by this approach. Kimes(2000) does not agree with this approach rather the writer suggests the multiplier effect approach is the best revenue management approach. Kimes is also in agreement with Orkin(1990) and Jauncey et al (1995) that segmentation proves to be one of the best approaches to revenue management.

Donaphy(1996) is of the view that although segmentation increases revenue this approach only concentrates on revenue. It does not also consider the impact of costs associated with the approach. Thus it does not take into account profitability which is a much better approach to revenue management. This comes to the approach of Keith Bryant(2001), the cost oriented approach. The author clearly puts it across as the best revenue management approach.

Bryant (2001) suggests that revenue management has been viewed by many scholars from a marketing or operational perspective with a few writers taking into account the right approach to this issue. Bryant (2001) goes on to say some scholars tried to write about the cost-oriented approach but many addresses it from a technical rather than functional perspective. The author now states that the identification of costs enhances the measurement of profitability. Jones and Hamilton(1992) are in full support of this approach as the best to revenue management.

The author states that costs should be compared with the revenue generated not to concentrate on the revenue alone. This shows a more acceptable picture of a revenue management approach as some approaches used are considered to be the best looking at the revenue generated only. When the company now start to factor in the costs associated with the approach it might end up not adopting that approach.

The cost-oriented approach can be adopted to show cost implications of the various goods and services as well as market segment. Cross(1997) actively argues against the use of the cost-oriented approach as the best revenue management approach. Cross (1997) states that there is no need to consider costs as improved revenue automatically leads to improved profits.

Cross(1997) argues that the costs considered by the cost-oriented approach are only variable costs rather than all the costs that should be taken account of. The costs should include variable and fixed costs associated with the product or service being produced. Cross(1992) is totally against the use of the cost-oriented approach and focuses purely on revenue.

Cross(1992) is of the view that tactics which result in sales increases or price improvements will have a greater impact on profits than those that focus on costs. Adrian Palmer and UnaMacMahon(2008)state that the best revenue management approach is through variable pricing.

The approach has become widely accepted revenue management approach as it maximises financial returns especially in service industries. This approach is more effective where demand is variable and fixed costs are a high proportion of total costs. A number of organisation have claimed increases in total revenue after adopting the variable pricing approach.

## **2.2 Summary**

Chapter two gives theoretical review over revenue management policies, how they are implemented, challenges being met in implementation of these policies, controls in place and the best approach to revenue management.

## **CHAPTER 3**

### **RESEARCH METHODOLOGY**

#### **3.0 INTRODUCTION**

Chapter 3 deals with the most important part of the research work. It brings out the research design, population used, sampling methods, sample design, sample frame, sample size, sampling techniques, type of data collected, research instruments, data presentation and data analysis.

#### **3.1 RESEARCH DESIGN**

Malhotra(2008) states that research design involves the method used to collect data or the research approach used in the study. It illustrates the ways of gathering information. The exploratory research design is defined as the provision of insight into and comprehension of the problem situation confronting the researcher. It is used where there is little or no research has been carried out about the subject under research. Literature reviews, case studies and interviews are examples of exploratory research designs.

##### **Advantages of Exploratory research design**

Yuen et al(2009) suggests that this research design helps the researcher to have a better understanding of the subject under research. This is because the researcher is given the chance to explore on his or her own. This way of gathering data is unstructured and therefore flexible. More complex and precise questions can be formulated for further studies when using this method.

##### **Disadvantages of Exploratory research design**

This research method cannot be used on its own for decision making purposes. It needs to be complemented by other designs. It is costly because a lot of work needs to be done as little or no data would have been gathered in previous researches. This also means that a lot of time is consumed in this method. The exploratory design is not precise in its focus and scope.

##### **Descriptive research design**

Glass and Hopkins(1984) suggests that this method involves the collection of data describing events. It also includes describing the data collection, organising depicts and tabulates. It is a more specific technique of gathering data.

It also involves various comparison groups so as to give a more reliable sample. The researcher also selected this method because it provides clear and more specific information. It is more precise on its focus and scope of study.

This research design gives comprehensive data over a situation. A case study research was used so as to concentrate resources on one entity. The Zimbabwe Electricity Transmission and Distribution Company (ZETDC) head office was used as the case study. The design used, the author required to find out the effectiveness of the use of prepaid meters as a revenue management tool at Zimbabwe Electricity Transmission and Distribution Company.

#### **Advantages of the descriptive research design**

Malhotra(2008)states that this research design gives the researcher the chance to use both qualitative and quantitative data when gathering information. It is a multifaceted approach. This is because it involves case studies, observations and surveys. Unique data is collected from case studies. In this way the descriptive method gives insight to cases where other methods cannot provide. This method limits of firm academic approaches. In this case researchers are allowed to experience an event or activity.

#### **Disadvantages of the descriptive research design**

Yuen(2008) states that confidentiality is compromised when using this research design. Subjects that researchers address may not always be truthful. Some respondents may not attempt questions that seem too difficult and personal especially during interviews. If a person know that he or she is being observed they change the way they act thus giving wrong assumptions to the researcher. The questions given are predetermined and prescriptive. This means errors may also be involved in the research.

#### **Justification of the descriptive research design**

This research applied the descriptive method. The researcher chose this research design as it is a more specific technique of gathering data. It provides clear and more specific information. It is more precise on its focus and scope of study. The researcher carried out observations in collecting data thus the descriptive method was the best fit as it is a multifaceted method which includes carrying out observations. The researcher also selected this method as it limits firm academic approaches. It allows the researcher to go through an event or activity.

### **3.2 POPULATION**

Cohen and Manion(1994) state that population is theoretically specified aggregation of the elements of study. Peterson(2002) also suggests that population is a group of study elements to which the research desires to come up with inferences and or for which collection of data is desired from the research.Target population is the group from which information is to be obtained.

To avoid bias in any form, Zimbabwe Electricity Transmission and Distribution Company (ZETDC) Head Office was selected as the population for research purposes. The population included all the staff of the company reporting at the head office. This was done so that the researcher would have a reasonable conclusion over the topic under research. The population size is two hundred people.

### **3.3 SAMPLING**

Kwesu et al(2004) suggest that the reason for sampling is to give conclusions about the population. Some elements of a population are selected using a suitable method in a way that the elements represent the characteristics of the finite population.

A portion of the population is known as a sample. This sample represents the whole population under study. Interviews and questionnaires were used on the population. Selecting a sample of units out of the finite population and estimating the value of the population is the main purpose for sampling. A sample size of thirty-five people was used to carry out the survey.

#### **3.3.1 Sample design**

The scheme used to pick elements of the whole population for the sample is known as sample design. The sample should represent the characteristics of the entire population. This ensures that inferences are valid over the population. The research was created out of the staff and clients at Zimbabwe Electricity Transmission and Distribution Company(ZETDC).This sample is believed to be a representative of the finite population.

#### **3.3.2 Sample frame**

The sample frame included the finance department and the prepaid meters section of Zimbabwe Electricity Transmission and Distribution Company(ZETDC).

### **3.3.3 Sample size**

The sample size of the research was thirty-five people. Sample for the units were selected using the non-probability sampling method. The size of population under review is reasonable and since the research aims at specified attributes judgement can be done.

#### **Advantages of sampling**

Fraekal and Wallen(1996) suggest that when using the sampling method costs are reduced. This is because reliable and useful information is given by a sample. Timeous decisions are made when using this method. Data is collected, presented and analysed at a faster rate. This is as a result of the size of the sample which is small ensuring the collection of sample data more quickly. Sidhu(2003) states that the size of a sample is small thus it helps to control errors more effectively. This means information from samples is more accurate.

#### **Disadvantages of sampling**

Sidhu(2003) suggests that when selecting objects or units for a sample, it is not all objects that are alike. This means the sample may not truly represent the entire population.

## **3.4 SAMPLING TECHNIQUES**

### **Simple Random Sampling**

Moyo et al (2005) state that every member of the entire population and every individual selected purely by chance has an equal chance of being included in the sample under selection. The simple random sampling is a technique that out of the entire population 'N', a sample of size 'n' is selected. This is done in a way that every element in 'N' has the same chance of being selected and included in the sample under selection.

## **Stratified Random Sampling**

Kwesu et al (2003) suggest that the stratified random sampling involves the splitting of the entire population elements into non-overlapping groups of the same characteristics known as strata. Furthermore, sampling is also done on a simple random sample from each stratum. Taking samples from each stratum or sub group of the entire population makes up each stratified sample. It is necessary that part of each stratum in the sample must be the similar as in the finite population in the case of sampling a population of several strata. Where the population is not similar the stratified random sampling technique is the best to apply.

Kwesu et al(2004) state that the stratified random sampling gives better estimators with a few variations and ensures representation of each of the sub groups in the whole population. The stratified random sampling technique was adopted during the research because of the differences among the groups of the people to be sampled. This was because of the nature of the problem under consideration where the staff and the customers were being sought.

### **3.5 Types of data**

Both primary and secondary sources were used in collecting data.

#### **3.5.1 Primary Data**

Needhan and Dransfield(2003) state that data collected for the first time from the horse's mouth is known as primary data. Drury(2003) agrees that primary data is data that is collected for the first time in the field. Questionnaires and interviews were used for primary data collection.

#### **Advantages of primary data**

Peterson(2002) states that as a result of primary data collection a wide distribution is possible. Respondents in subsidiary companies can be reached as well. This promotes observation and conclusions are drawn. Primary data collection is a more reliable and dependable way of data collection. Since it is first hand information it gives a more definite place of where it came from, how it was collected and analysed. This is because the researchers carry out the data collection themselves.

### **Disadvantages of primary data**

Different sources may be used to collect data and during the compiling process of this data distortions may arise. It takes more time other than secondary data. Other research projects may be potential to offer valuable information may not be within the reach of the researcher. Most researches are too large to be carried out thus may not be feasible to use this method. This method is expensive as it involves a lot of costs in preparing and carrying out the research.

### **3.5.2 Secondary data**

Sidhu(2003) states that secondary data includes published data sources. Secondary information is updated by data collected from primary data. The sources can be temporary or historic. The data can be quantitative or qualitative which should be adjusted before being in use. Secondary data sources are textbooks, mass media, official statistics and content analysis such as news papers. Credibility, soundness, authenticity and authorship should be considered when analysis the reliability of secondary sources.

### **Advantages of secondary data**

The analysis of social processes in what could not be accessible settings can be allowed because of the use of secondary data. Limited work is to be done since the research would have already been done. This means it saves costs and time as well.

Problems associated with data collection are avoided. When using secondary data collection comparison with other data samples can be facilitated. This enables a number of sets of data to be combined. Other variables may also be included giving a diversified sample than which could have been collected.

### **Disadvantages of Secondary data**

Formulation of a research question and designing methods of addressing the question cannot be allowed by secondary data collection. Frequent observations and developing concepts is not feasible for a secondary data analyst. These limitations block original research question to be aimed at. The data sources may not be trusted thus compromising the reliability over the data and the quality of the data.

## **3.6 Research Instruments**

### **3.6.1 Questionnaire**

Saunders et al(2007) states that a questionnaire consists of well structured and designed questions where the recipient is able to give data on the subject under research.

The questionnaire comprise of closed questions where fixed responses are given by the recipient and questions where free responses are provided by the respondent in his or her own words. Preliminary considerations, question content, question phrasing, choice of response format, question sequence, question layout, pre-testing the questionnaire and compilation of the final version of the questionnaire must be taken into consideration when drafting a questionnaire.

The research questions formulated in chapter one are the basis of designing the questionnaire. Detailed information on these questions should be provided after the field research has been completed. This is helpful to the researcher as it aids in coming up with quick and precise conclusions from properly filled questionnaires.

#### **Advantages of questionnaires**

Questionnaires have a tendency of reducing bias since respondents express their own views and comments independently. Questionnaires give less emphasis for prompt responses as compared to interviews.

Quite a number of locations are impacted by the use of questionnaires, there is wide geographical coverage. When applied properly questionnaires have a great potential of gathering a huge part of information required.

Where distance is the limiting factor questionnaires are the best tool to be used for collecting data than interviews and observations. Questionnaires give recipients enough time to carefully go through the questions and provide responses appropriately. Great confidentiality is given as no name is disclosed on the questionnaire.

#### **Disadvantages of questionnaires**

Questionnaires do not allow for further questioning when inadequate responses are given as compared to interviews. Responses may be biased as the questions may be structured in such a way that is directing.

The drop and pick method has usually shown less responses to the questionnaires. The subject under research may not be familiar to the respondents thus providing inappropriate information. Questionnaires do not provide gestures and visual clues with help in responding to the questions.

### **3.6.2 Interviews**

Interviews are conducted so as to get professional views on an area under research and they compliment information gathered by questionnaires. They can be held formally or informally that is they can be face-to-face questions or unceremonious answer sessions outside the office.

#### **Personal interviews**

This is a meaningful discussion over two people or even more. Healy (2003) takes a personal interview as a face to face questionnaire helpful in getting access to the mind of a person. Interviews were conducted on the sample given above. Where there are numerous questions to be responded to, where there is need for variation of the sequence of questions and where questions need to be further explained, Saunders(2007) and Healy(2003) agree that personal interviews are the best to apply.

#### **Advantages of personal interviews**

Immediate responses are given during the interviews. Clarification of questions is enhanced before any response is given. Communication is made easy especially where there is no language barrier. The chance of not getting any responses is very limited. More information can be obtained by probing. The interviewer can also collect non-verbal information taking advantage of the opportunity.

#### **Disadvantages of personal interviews**

The interviewee may not get adequate free time for the interview to be conducted during working hours. Interviews require prompt responses not giving the interviewee time to go through the questions and gathering facts.

#### **Telephone interviews**

Cohen(2003) states that a series of pre-organised questions can be asked over the telephone noting down responses. This can be used as a research instrument.

The chosen sample for the research work for Zimbabwe Electricity Transmission and Distribution Company was located in Harare so face-to-face interviews could not be conducted due to financial constraints. Telephone interviews were conducted to curb the situation. The research questions were used to formulate questions for the interview. Further probing of questions was dependent on the interviewee. The telephone interview was limited to ten minutes.

#### **Advantages of telephone interviews**

It is a quick way of getting information. Further explanation on the questions is provided when using this approach. Telephone interviews enhance the asking of more questions out of the ones noted thus providing more information. It prompts other ideas which can be made as recommendations. To an extent telephone interviewing provides honest responses than the use of questionnaires.

#### **Disadvantages of telephone interviews**

This technique is costly. It involves a lot of telephone charges. This is because the interview may take more time and therefore high telephone bills are experienced. Non-verbal responses cannot be observed when this technique is applied, therefore, limited information can be collected.

There can be poor connectivity during calls and the interview may not be as effective as anticipated. In some cases the respondent may just decide to hang up or not pick calls thus limiting efficiency of the technique. Anonymity is also lost as a result of telephone interviews.

### **3.6.3 Observation**

This is a technique involving the researcher watching things done. The author was involved in the observation process during work related learning. The period stretched up to one year. The researcher rotated in the finance department of Zimbabwe Electricity Transmission and Distribution company(ZETDC). The author observed and gathered relevant data to the subject under concern.

#### **Advantages of observation**

This technique has the advantage of recording events as they occur. While observing, data can also be noted. In case of grey areas the researcher can confidently ask for assistance.

Observation reaffirms data collected using other techniques. Observing an event or activity gives the true picture of the subject under research.

#### **Disadvantages of observation**

The researcher may deviate on objectivity of the study as a result of close relationships with management or personnel therefore data collected may be biased.

#### **3.7.0 Close ended questions**

Close ended questions are carefully designed in these questionnaires so as to collect as much information as possible from the respondents. Dillman et al(2009) states that close-ended questions are questions that limit respondents with a least of answered questions from which to choose in answering the question. Most questions with this format are multiple choice questions.

#### **Advantages of close ended questions**

It is easier and quicker for respondents to answer. Responses provided by different respondents can be easily compared. It is easier to code and analyse the statistical answers from close-ended questions. Giving response choices enables clarification to respondents. There is limitation to confusing and vague responses. Replication is made easier.

#### **Disadvantages of close ended questions**

Respondents may not provide the ideas as suggest by the question. People with no opinion and knowledge about the topic in discussion may just answer in any way which may not be relevant. Some respondents may be disappointed if their desired answer is not provided on the given choices. It may be confusing to other respondents if the choices are many. If questions are misinterpreted then it may go unnoticed. Close-ended questions may force the people answering the questions to give simple responses to sophisticated issues.

#### **3.7.1 Open ended questions**

Open ended questions are also designed in the questionnaires. Open-ended questions cannot be answered with a specific piece of information. Dillman(2009) states that open ended questions give the respondent a wide scope to provide information that seem relevant and appropriate to them.

### **Advantages of open ended questions**

They allow unlimited responses to given questions. Respondents can answer in detail and can clarify and qualify responses. Unexpected findings can come up as well. Complex issues are fully addressed. Creativity and self expression is allowed by open-ended questions. They reveal the respondent's thinking process, logic and frame of reference.

### **Disadvantages of open ended questions**

Different degrees of information are given due to different responses. Some responses may be irrelevant to the subject under discussion. Comparing and analysing the data becomes difficult. Coding the responses becomes more complex. Greater amount of time and effort is required.

### **Likert Scale**

Bissonnatte (2004) states that the likert scale is a psychometric response scale which is used to get the extent of agreement of the respondent through questionnaires. The technique does not provide room for comparison. An ordinary scale is given for respondents to indicate their level of agreement. The scale ranges from strongly agree to agree to neither agree to disagree to strongly disagree.

Each level on the scale is given a numeric value, starting from one and increasing by one to the next level. The close ended questions were used in designing the questionnaire used in the research.

### **Advantages of the likert scale**

The likert scale is easy to understand and easy to understand. This means respondents get a clear picture of what is expected of them when answering. The likert scale uses quantitative information therefore it is easy to draw conclusions from the provided data. A social aspect is illustrated by this scale as it give the respondents the opportunity to show the extent of or agreeing or disagreeing. The scale does not allow extreme responses as the responses are confined to the scale. This helps in retrieving relevant data to the subject under discussion.

### **Disadvantages of the likert scale**

The likert scale does not offer the either or option when responding to the questions given on the questionnaire. It limits respondents to the options given only and not allowing them to air out their views not given by the scale.

### **Data validity and reliability**

Validity refers to the extent to which data collected is really what it claims to be. It also means how well information collected purports what it is supposed to measure. For data to be reliable it needs to be valid. The objectives of the research should be clearly defined to be able to collect valid data. The data collected should sufficiently address the objectives of the research. Comparison with similar information helps in checking the validity of the information. Reliability refers to the extent to which an evaluation tool produces the same results over and over again. For information in a research to be reliable it must produce the same outcome when subjected to tests.

## **3.8 DATA PRESENTATION**

Tables together with text were used to present the data collected.

### Tables

#### Advantages

When tables are used information provided is easier to understand when presented using tables. This is because tables are simple and short phrases are used in labelling them. Interpretation of data is easier also because of the simplicity of information given in tables. Tables are simple to construct unlike other ways of presenting data.

#### Disadvantages

Further explanation is not available on tables. Only brief and short notes are highlighted. This means some may not have complete detail of the matter under discussion.

### Text

Sentences and paragraphs were used to present data collected during the research especially from interviews. This aid in giving information that cannot be presented or analysed using figures.

Although tables are easier to understanding further information must be provided to complement the data presented on the tables. Text provides data in summarised format which helps in quicker and easier understanding of the matter under concern.

### Pie Charts

Wiley(2003) states that a pie chart is a chart in circular form apportioned into sectors giving numerical proportion. The quantity represented is proportional to the arc length of each sector. Pie charts are mostly used for presenting data which has been collected for easier understanding and interpretation. Pie charts were also used to present data gathered during research.

### Advantages of Pie Charts

A pie chart gives a simple and easy-to- understand picture of the information provided. Representation of data visually in form of fractions makes it easier for uninformed audience to understand the message being communicated. Data can be compared at a glance making analysis of the data easier. Visualisation of data presented makes it unnecessary to study underlying numbers on the pie chart. Emphasis on certain points can be made by manipulating those areas on the pie chart.

### Disadvantages of Pie charts

If numerous pieces of data are being used then the chart becomes ineffective. The work will become too crowded and labels become difficult to incorporate in this case. A pie chart only represent on set of information. The chart is complicated to understand as the reader has to factor in angles and compare non-adjacent slices. This makes comparison of sectors more difficult. Manipulating data in designing the pie chart becomes may cause readers to draw in appropriate conclusions. This is because readers may end up making decisions based on visual impact rather than data analysis.

### Graphs

Cohen and Halvin(2010) state that a graph is defined by the equation  $G=(V,E)$ . V refers to the set of vertices or nodes and E, to a set of edges and lines. E and V are taken to be finite This is a simple an undirected graph. Different types of graphs can be used to present data. Graphs were used to present data collected during the research.

### Advantages of graphs

Readers easily understand the information by visualising the graph. There is clarification on certain type of information where visual clues are needed. The slope, maximum and minimum points are provided by graphs. This makes the analysis of data easier . Information can be easily interpreted by the illustration of a curve.

### Disadvantages of graphs

A lot of work is involved in coming up with a graph. This means it requires more time and effort of the researcher. Since the formulation of graphs require more time it becomes a tiring process. The graph can be very inaccurate if drawn using a free hand. Inappropriate information is presented if the graph is not precisely drawn. When using fractions or decimal numbers the graph becomes inconvenient.

## **3.9 Data analysis**

In analysing data the researcher used the mean, mode and median methods.

### Mean

Stapel(2004) states that the mean is the average of the data given. It involves adding up all the objects and dividing by the number of objects given. In calculating the mean all data is used in the calculation process. This enables the data analysed using the mean method more reliable. It is a disadvantage however to too large and too small units. This is because the size distorts the answer.

### Median

Stanley(2000) states that the median is the middle value in a list of numbers. In calculating the median the numbers have to be arranged in numerical order. When the totals of the list are odd then the middle value becomes the median after arranging the numbers in an increasing order. In the case that the total of the list are even, the median is calculated by adding up the two middle value and diving by two after sorting the figures in an ascending order. This method is not affected by too big or too small figures. It however, takes more time in calculating from a large set of data.

## Mode

Wilson(2001) states that the mode is the number that occurs more often. If there is no number repeated then there is no mode. This method is the only one used to analyse data that is not numerical. The method gives rise to cases where the mode is more than one. This makes the analysis more difficult. In some instances a mode will not appear. This will make the interpretation of data vague.

### **3.10 Summary**

This chapter looked at the research design, population used in the research, sampling design, sample size, sample frame, sampling techniques, types of data used, research instruments, data presentation and data analysis used by the researcher. Chapter four will cover the presentation and analysis of the data collected during the research.

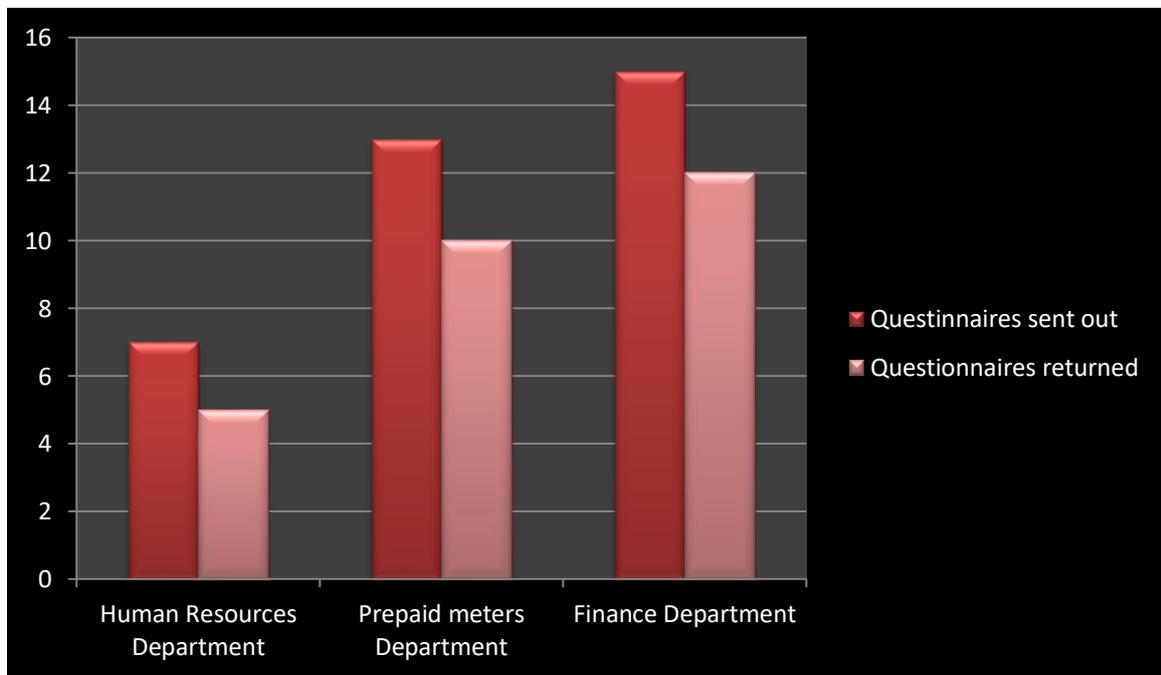
**CHAPTER 4**  
**DATA PRESENTATION AND ANALYSIS**

**4.0 INTRODUCTION**

Chapter four focuses on the presentation and analysis of data collected from interviews, questionnaires, observations and desk research carried out. It presents the data in form of tables and charts, describe, analyse as well as interpret the data so as to get a meaning.

**4.1 Response rate**

**4.1.1 Questionnaire response rate**



**Fig 4.1 Questionnaire response rate**

Most questionnaires issued to top management and employees were returned. Thirty five questionnaires(100%) were issued out and twenty seven(77%) were returned as illustrated by the bar graph above. For the human resources department seven were issued out and five were returned. Thirteen to the prepaid meters section and ten were returned. Fifteen questionnaires were issued to the finance department and twelve were returned .The data analysis is based on the returned questionnaires.

**Table 4.1: Information regarding the respondents' gender**

<b>Gender</b>	<b>No. of Respondents</b>	<b>Percentage Response</b>
Male	18	67%
Female	9	33%
<b>Total</b>	<b>27</b>	<b>100%</b>

*Source; Primary data*

The table above illustrates that 18/27, that is, (67%) were males and (33%) were females. These occupy top management positions middle positions in the company therefore, are competent to give relevant responses to the researcher's study.

**Table 4.2: Presentation of data on the respondents' experience on current positions**

<b>Experience in Positions</b>	<b>1yr</b>	<b>1-5yrs</b>	<b>6-10yrs</b>	<b>&gt;10yrs</b>	<b>Total</b>
Responses	4	6	12	5	27
Percentage Responses (%)	15	22	44	19	100

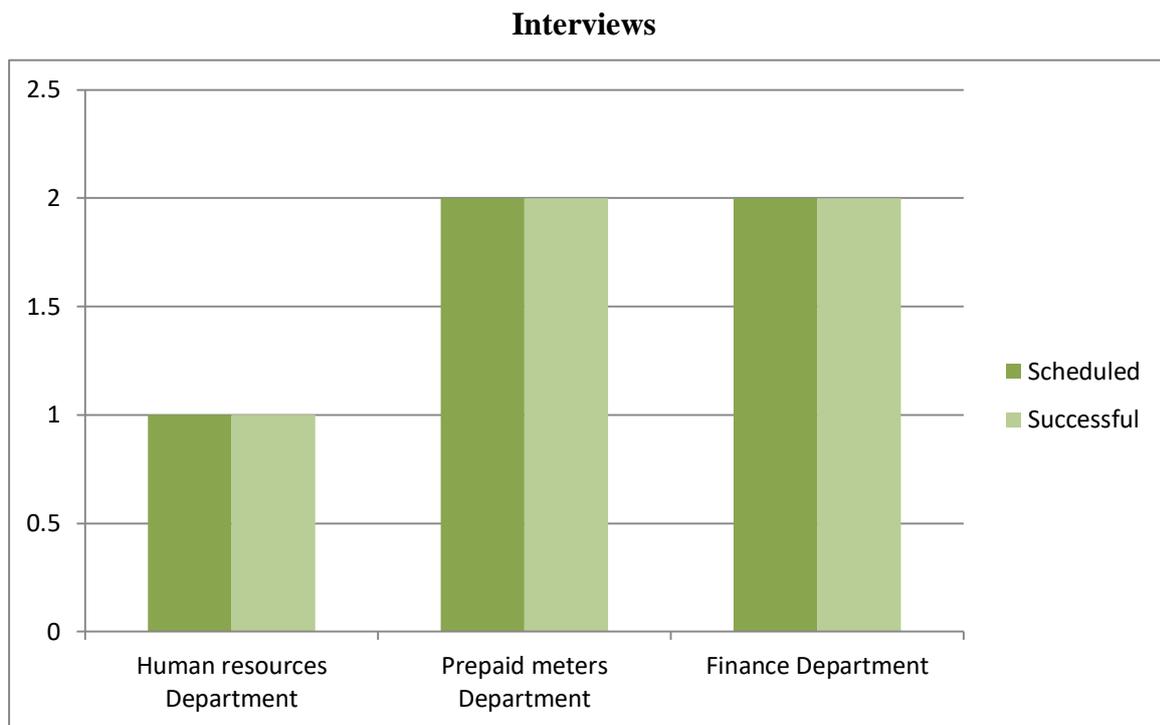
*Source ;Primary Data*

The data above shows that most of the respondents were more experienced as indicated by the 12 respondents between 6 to 10 years of experience. This makes the information more reliable and relevant to the subject under discussion. A few were less experienced with only 4 respondents are indicated. 6 respondents are growing in experience of their positions and only 5 have an experience of more than ten years on their current posts.

#### **4.1.2 Interviews response rate**

All the telephone and personal interviews planned were successfully carried out. The interviews were done with the top management of the company.

Five officers were interviewed and the response rate was 100%. The interviews were carried out from all the relevant departments to the research. This shows that the information collected from these interviews is significant and can be used in the research for drawing conclusions. The response rate from personal and telephone interviews are illustrated below.



**Fig 4.2 Interview response rate**

**Are you directly involved in the process of revenue collection?**

80% of the respondents who were asked responded yes to this question agreeing that they are involved directly in the revenue collection of ZETDC. 20% stated that they are not directly involved in the revenue collection but they contribute in the revenue collection process of the company. This implies that the data collected is significant and relevant to the research.

**Why was the prepayment revenue system introduced?**

All the respondents stated that the prepayment system was introduced so as to curb the challenges which were being posed by the use of the convectional billing system.

Customers refused to pay their bills, arguing ZESA's billing system. ZESA was owed more than US \$600 million approximately 60% by domestic and 40% by commercial consumers which the company desperately needed to maintain infrastructure by November 2012 when it was using the billing system. As a result of this ZESA also struggled to settle its foreign debts. For these reasons the prepayment system was introduced.

**What are the effects of the introduction of the prepayment as a revenue management tool?**

Of the 5 officers asked about the effects of the prepaid meters system 3 of the officers were of the opinion that the beneficiary effects of the prepayment system were outweighed by the problems which were being caused by the system. The officers however, were of the opinion that the system can be amended with improvements on weaker areas. This could be an effective revenue collection tool. 2 of the officers stressed out that the system was far more than good and that its benefits were way off its disadvantages.

**How was the prepayment policy implemented?**

80% of the respondents suggested that the policy was clearly and effectively communicated to management before implementation. The policy was then communicated to all the employees by management team. Personnel were involved in the implementation process. The top management attended workshops during the implementation process to be fully addresses of the new policy. 20% however, were of the view that the communication was not clearly communicated to customers.

**What challenges are you facing due to the introduction of prepaid meters?**

Most of the respondents strongly agreed that the revenue management policy is posing a lot of challenges. The objectives of the prepayment revenue management policy seem to have come under threat after consumers started tempering with the meters. 4 respondents strongly supported that meter tempering has resulted in ZETDC losing US \$10 million monthly in potential revenue since October 2013. Targeted monthly revenue is about US \$70 million but the company is getting about US \$60 million resulting in an adverse variance of approximately 10% every month against about \$900 million debt to be settled by the company. This drop in revenue has affected operations at such a time when the country is facing power shortages for it can only generate 1200 megawatts against a high demand of 2200 megawatts.

**How efficient and effective is the prepayment system?**

All the officers were of the opinion that even though the prepayment system was expected to be effective; it has brought about a few benefits to the company.

The main benefit outlined was the reductions of the bad debts written off which were brought by the billing system. They also outlined that there was a reduction in the costs to the organisation since there was no longer meter reading costs. In the first few months after the introduction of the system revenue collection increased not until the customers started tampering around with the prepaid meters in October 2013. This has made the revenue tool ineffective and inefficient to an extent.

**What method of revenue collection do you think is the best?**

3 of the respondents suggested that prepayment system is the best revenue collection method but needs to be improved on its areas of weaknesses. The other 2 suggested that the convectional billing system was way better than the prepayment system therefore, suggested that the company should resort to this system again.

**Is the prepayment system convenient compared to the convectional billing system?**

4 officers agreed that the prepaid meters are better than the convection billing system. Since its incorporation the company used the conventional billing system before the introduction of prepaid meters which posed a lot of challenges. Customers refused to pay their bills, arguing ZESA's billing system. ZESA was owed more than US \$600 million approximately 60% by domestic and 40% by commercial consumers which the company desperately needed to maintain infrastructure by November 2012 when it was using the billing system. As a result of this ZESA also struggled to settle its foreign debts. 1 officer however, stated that the billing system was far better than the prepayment because of the high rates of the electricity theft leading to decreases in revenue collection.

### **Is the prepayment system increasing the revenue collection?**

80% stated that in the first months after the introduction of the policy revenue increased but later on decreased. The company is losing approximately US \$10 million monthly in potential revenue since October 2013.

Targeted monthly revenue is about US \$70 million but the company is getting about US \$60 million resulting in an adverse variance of approximately 10% every month. 20% however, supported that revenue is increasing by the introduction of prepaid meters.

### **What are the controls in place over prepaid meters?**

The officers interviewed all agreed that there were no essential controls over the prepaid meters. The top management was reluctant over the controls in place over the software used to collect revenue, the acquisition of the prepaid meters and the implementation of the meters. The controls over revenue policy are not being frequently assessed and upgraded. All the officers interviewed agreed that if the controls are given special attention the prepayment system may be as effective as it had been intended to be.

## **DETAILED ANALYSIS OF QUESTIONNAIRE QUESTIONS**

### **4.2. THE EXISTENCE OF A REVENUE MANAGEMENT POLICY AT ZETDC**

#### **ZETDC has a revenue management policy**

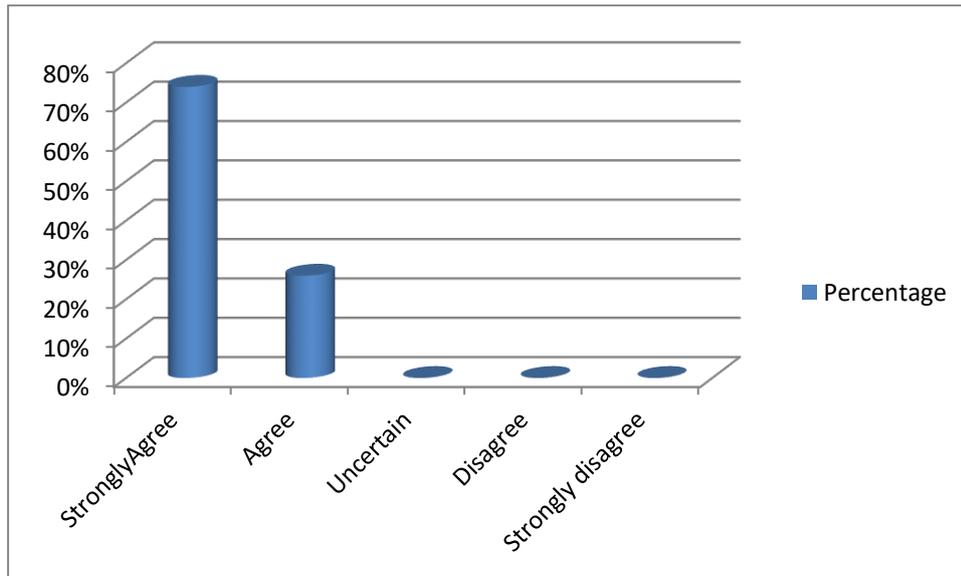
**Table 4.3: Responses to the existence of a revenue management policy**

	Strongly Agree	Agree	Uncertain	Disagree	Strongly disagree
Number of respondents	20	7	0	0	0
Percentage	74%	26%	0%	0%	0%

*Source ; Primary data*

As illustrated by the table above 74% of the respondents strongly agreed that there is a revenue management policy at ZETDC. 26% also agrees that the company has a revenue management policy. This data collected shows that there is a functioning revenue management policy at ZETDC. No respondent was uncertain, disagreed and strongly disagreed as indicated by the 0% in the table above. This data concludes that 100% agreed

that there is a revenue management policy at ZETDC and 0% disagreed. The data can also be illustrated using the graph below.



**Fig 4.3 The existence of a revenue management policy**

**The Policy is formally documented**

**Table 4.4: Responses to the formal documentation of the revenue policy**

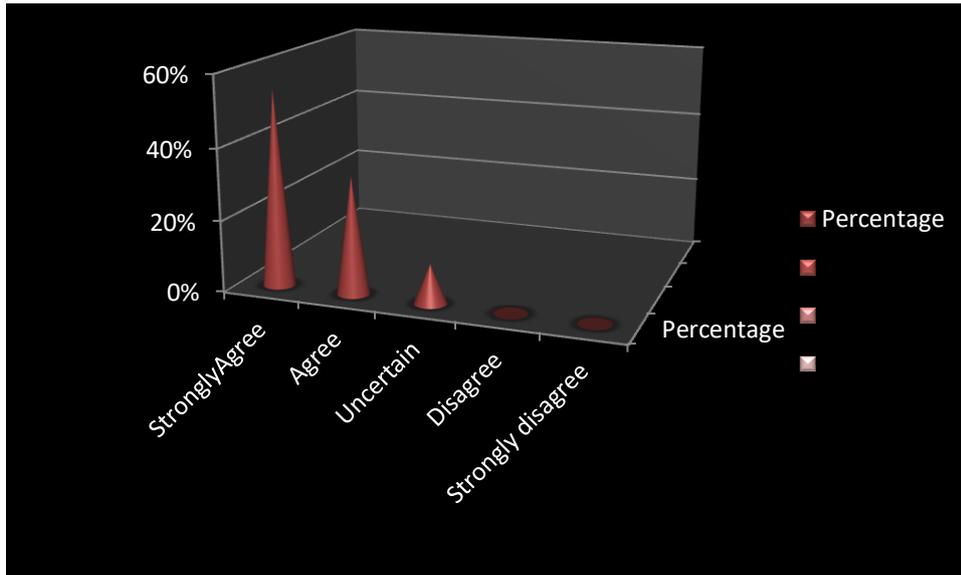
	Strongly Agree	Agree	Uncertain	Disagree	Strongly disagree
Number of people	15	9	3	0	0
Percentage	55%	33%	11%	0%	0%

*Source ; Primary Data*

Most respondents strongly agree that the revenue management policy is not only present but formally documented as well. This is supported by the fifteen respondents illustrated in the table above. Nine people also supported that the policy is formally documented but however, 11% of the respondents were uncertain that the policy is formally documented. This small group of people may give attention to management noting if all personnel is fully aware of

the documentation of the revenue policy. No one among the respondents disagreed and strongly disagreed that the revenue management is formally documented. To a certain extent this supports that the documentation of the policy is formally documented.

The data above concludes that 88% agreed that the policy is formally documented and 11% disagreed. The information is also illustrated in fig 4.4 below.



**Fig 4.4 The formal documentation of revenue policy**

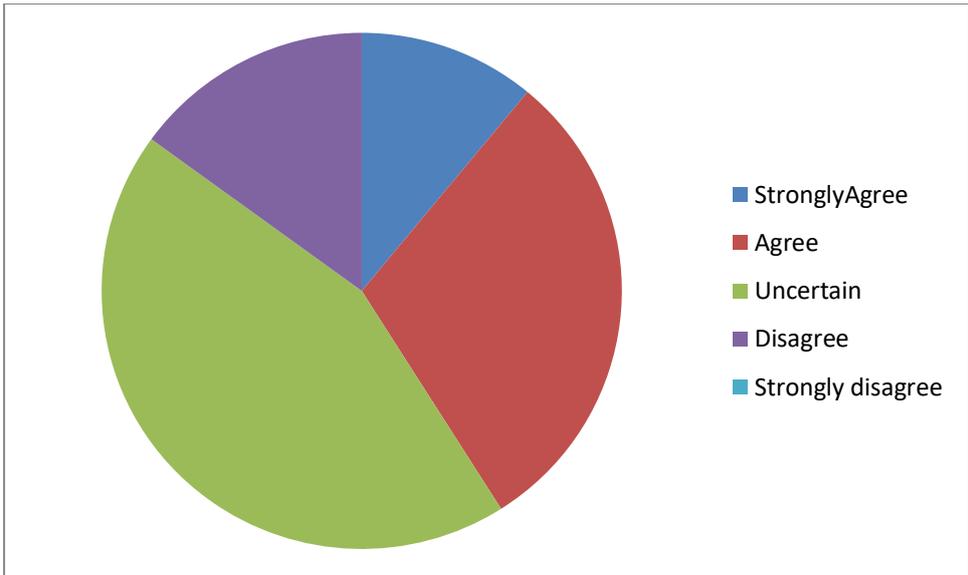
**The revenue management policy is clarified to customers for better understanding.**

**Table 4.5: Responses on the clarification of the policy to customers**

	Strongly Agree	Agree	Uncertain	Disagree	Strongly disagree
Number of people	3	8	12	4	0%
Percentage	11%	30%	44%	15%	0%

*Source ; Primary Data*

The data in the table above is alternatively represented in the graph below.



**Fig 4.5 The clarification of the revenue policy to customers**

Most of the respondents were uncertain of the clarification of the revenue policy to customers as illustrated by the 44% in the table above. 15% went on to disagree that the policy has been clarified to customers. This means management has to take a look at its effectiveness and efficiency of their communication with customers on this revenue policy. 30% however, agree that the policy has been clarified to customers and 11% of the respondents strongly agreeing to this as indicated by the table above. No one strongly disagrees that the policy is clearly spelt out to customers. The data presented above concludes that 41% agreed and 59% disagreed.

**The policy is fully addressed to management**

**Table 4.6: Responses to the full addressing of the policy to management**

	Strongly Agree	Agree	Uncertain	Disagree	Strongly disagree
Number of people	0	5	18	2	2
Percentage	0%	19%	67%	7%	7%

*Source ; Primary Data*

67% were uncertain that the policy has been addressed fully to management and this raises an eyebrow on how knowledgeable the management is over the policy. This is worsened further by the 7% who strongly disagreed that the policy was communicated to management.

Five respondents however agree that the policy has been fully addressed to management as illustrated by the table above. No one strongly agreed to the full addressing of the policy to management. The above data concludes that 19% agrees and 81% disagrees.

### 4.3 ZETDC POLICY IMPLEMENTATION GUIDELINES

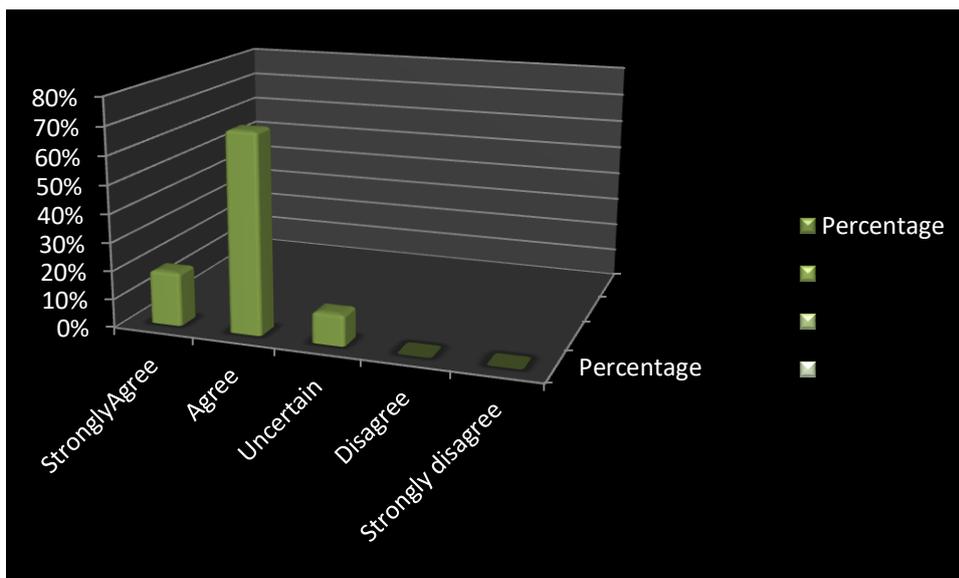
There are revenue management implementation guidelines at ZETDC

**Table 4.7: Responses to the existence of policy implementation guidelines**

	Strongly Agree	Agree	Uncertain	Disagree	Strongly disagree
Number of people	5	19	3	0	0
Percentage	19%	70%	11%	0%	0%

*Source ; Primary data*

Most respondents agreed that the company has revenue management policy implementation guidelines as illustrated by the 70% in the table above. 19% of the respondents strongly agree that implementation guidelines are in place but however as shown in the table above 11% of the respondents are uncertain. The uncertainty of other personnel should catch the eye of management and see to it what needs to be done. 0% disagreed and strongly agreed to the existence of the policy implementation guidelines. The data above concludes that 89% agreed and 11% disagreed. The data is also presented in the graph below.



**Fig 4.6 The existence of implementation guidelines**

**The policy implementation guidelines are documented**

**Table 4.8: Responses to the documentation of policy implementation guidelines**

	Strongly Agree	Agree	Uncertain	Disagree	Strongly disagree
Number of people	5	6	14	2	0
Percentage	19%	22%	52%	7%	0%

*Source; Primary Data*

Most of the respondents were uncertain that the policy implementation guidelines are documented as shown above. 22% however agreed and 19% strongly agreed during the research that the guidelines of the implementation are formally documented. This means the documentation of the guidelines should be looked into by management as the greater fraction of the respondents were uncertain of it. 2% disagreed and 0% strongly disagreed. The data presented above concludes that 41% agreed and 59% disagreed.

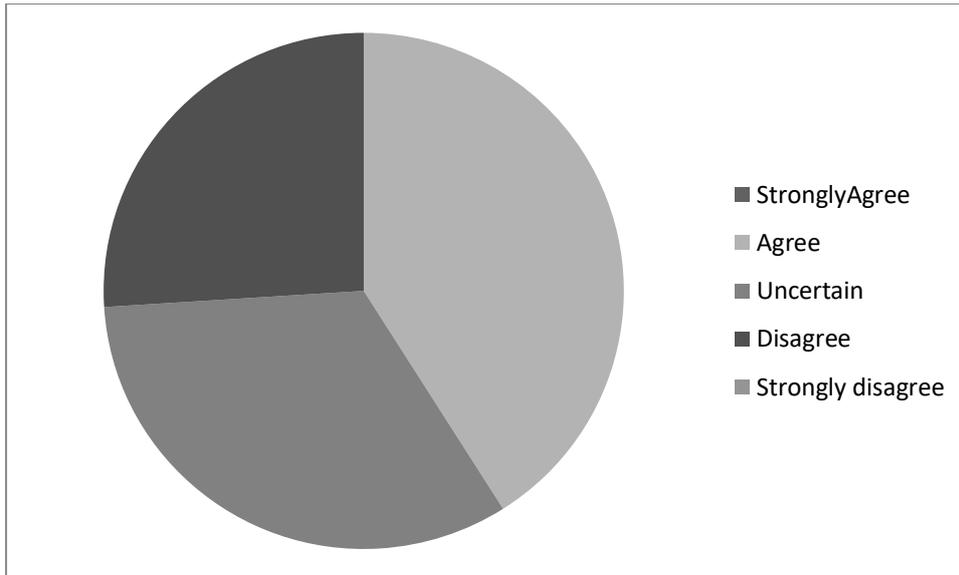
**Prepaid meters guidelines are also available to customers**

**Table 4.9: Responses to the availability of prepaid meters guidelines to customers**

	Strongly Agree	Agree	Uncertain	Disagree	Strongly disagree
Number of people	0	11	9	7	0
Percentage	0%	41%	33%	26%	0%

*Source ; Primary Data*

The greater part agreed that the prepaid meters guidelines are also available to customers as shown by the eleven respondents in the table above. Nine respondents however, were uncertain and seven disagreed that the guidelines are available to all customers. No one strongly agreed and strongly disagreed on this issue. The data presented above concludes that 41% agreed and 59% disagreed. The pie chart below alternatively represents the data shown above.



**Fig 4.7 The availability of customers prepaid meters implementation guidelines**  
**Implementation guidelines are always compiled with**

**Table 4.10: Responses to the compliance of the implementation guidelines**

	Strongly Agree	Agree	Uncertain	Disagree	Strongly disagree
Number of people	2	5	7	13	0
Percentage	7%	19%	26%	48%	0%

*Source ; Primary Data*

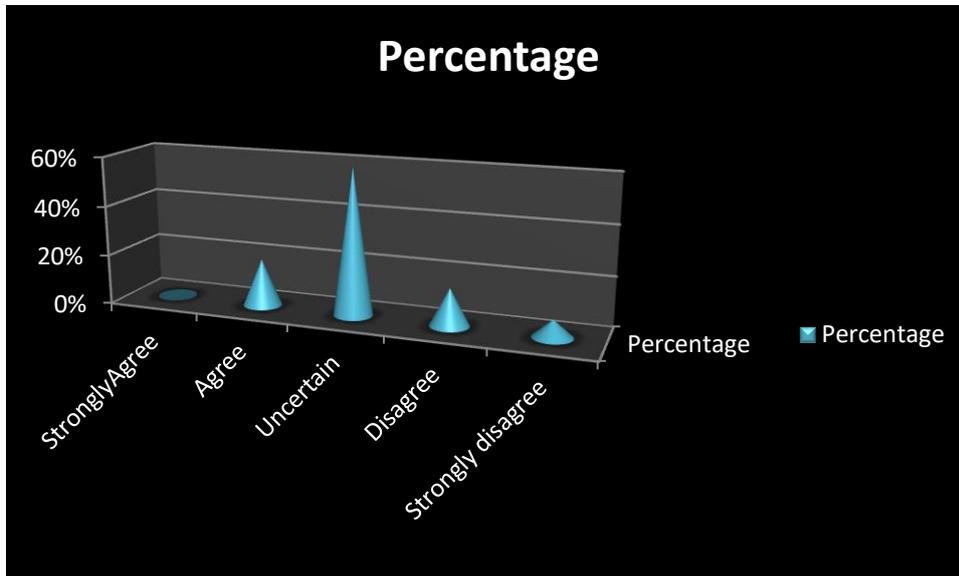
48% of the respondents disagreed that the implementation guidelines are always complied with and this raises a need for analysing the compliance to the guidelines provided. This analysis is vital as 26% of the respondents were uncertain if the implementation guidelines are being complied with by personnel. 19% however, agreed that the guidelines are being complied with as illustrated in the table above. 2% strongly agreed and strongly disagreed. The data presented above concludes that 26% agreed and 74% disagreed.

**The implementation guidelines are clarified to personnel for better understanding**

**Table 4.11: Responses to the clarification of implementation guidelines to personnel**

	Strongly Agree	Agree	Uncertain	Disagree	Strongly disagree
Number of people	0	5	16	4	2
Percentage	0%	19%	59%	15%	7%

The data in the table above is also represented in the graph below.



**Fig 4.8 The clarification of implementation guidelines to personnel**

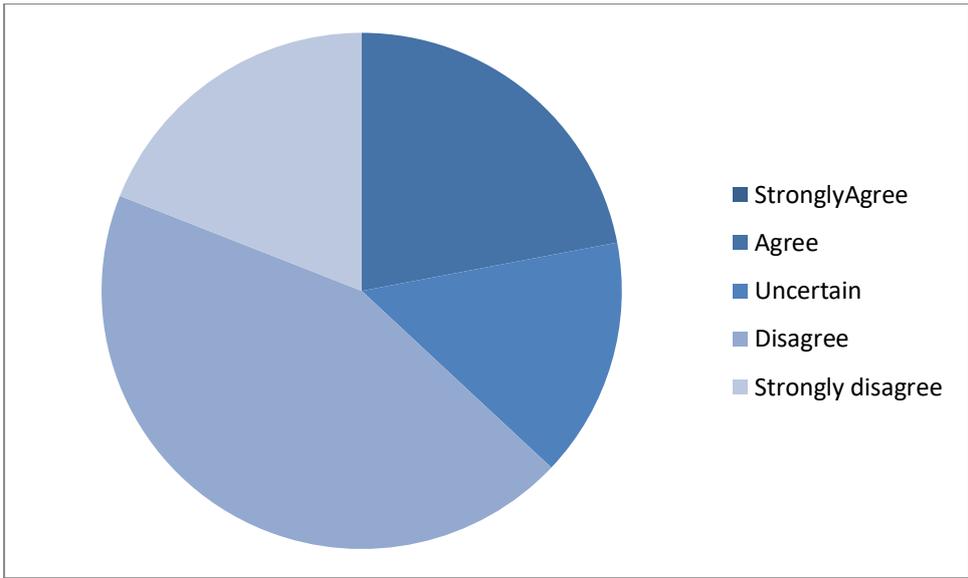
Although 19% of the respondents agreed that implementation guidelines are clarified to personnel, 67% were uncertain of it and 15% disagrees that the guidelines were clarified as illustrated in the table above. No one strongly agreed and strongly disagreed on this issue. The data presented above concludes that 19% agreed and 81% disagreed.

#### 4.4 CONTROLS OVER REVENUE MANAGEMENT POLICY AT ZETDC

**Revenue management policy implementation controls are in place**

**Table 4.12: Responses to the existence of controls over revenue management policy**

	Strongly Agree	Agree	Uncertain	Disagree	Strongly disagree
Number of people	0	6	4	12	5
Percentage	0%	22%	15%	44%	19%



**Fig 4.9 The existence of controls over revenue management policy**

The table and pie chart above illustrate the same information alternatively. Most of the responses given disagreed that there were controls over the implementation guidelines as represented by the 78% in the table above. This calls for top management to give attention to this aspect of controls. 22% of the respondents however, agree that the controls are in place and 15% were uncertain. 0% strongly agreed and 19% strongly disagreed on it. The data presented above concludes that 22% agreed and 78% disagreed.

**The controls over revenue management are clearly defined**

**Table 4.13: Responses to the clear defining of controls in place**

	Strongly Agree	Agree	Uncertain	Disagree	Strongly disagree
Number of people	2	5	4	14	2
Percentage	7%	19%	15%	52%	7%

*Source ; Primary Data*

The bulk of the respondents disagreed that the controls over the policy are clearly defined as shown by the 14 respondents in the table above. This calls for the questioning of how the controls over the revenue management were communicated to personnel as 4 respondents were uncertain of the clarification on the controls. 5 respondents however, agreed that the controls over revenue management are clearly defined as shown in the table above.

2 respondents strongly agreed and 2 respondents strongly disagreed on this issue. The data presented above concludes that 26% agreed and 74 disagreed.

**The revenue management policies are authorised by reliable management before implementation**

**Table 4.14: Responses on the reliability of management before policy implementation**

	Strongly Agree	Agree	Uncertain	Disagree	Strongly disagree
Number of people	9	18	0	0	0
Percentage	33%	67%	0%	0%	0%

*Source ; Primary Data*

33% of the respondents strongly agreed that the revenue management policies are authorised by reliable management before implementation. 67% agreed as well. 100% therefore agreed that the policies are authorised by reliable management.

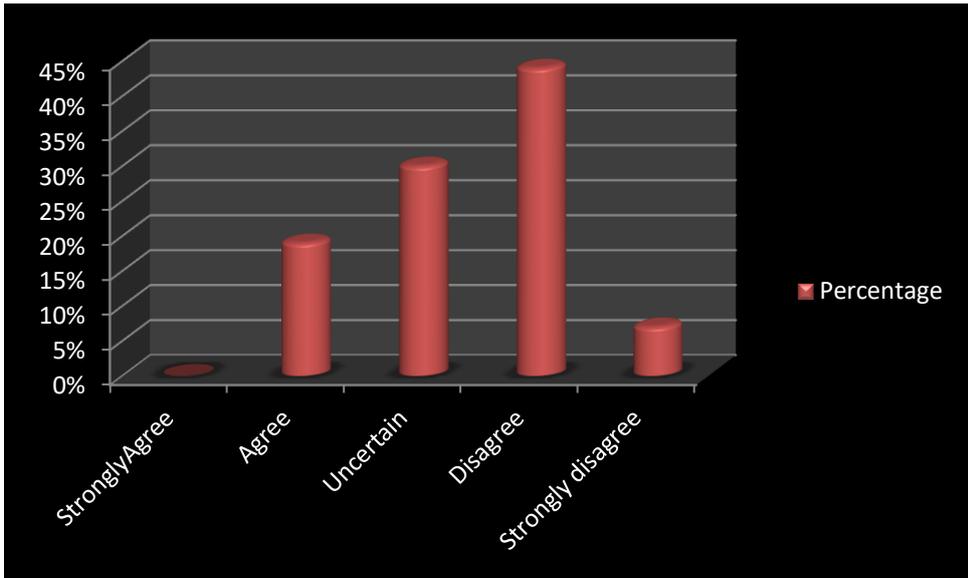
**The controls over policy implementation are regularly assessed**

**Table 4.15: Responses on the assessment of controls over policy implementation**

	Strongly Agree	Agree	Uncertain	Disagree	Strongly disagree
Number of people	0	5	8	12	2
Percentage	0%	19%	30%	44%	7%

*Source ; Primary Data*

The graph below alternatively represents the data in the table above.



**Fig4.10 The assessment of revenue management controls**

44% of the respondents disagreed that the controls over the revenue management policy are assessed regularly as shown in table above. This raises an eyebrow on the integrity and efficiency of top management as 37% of the respondents is also unaware of the assessment of the controls regularly. However, 19% of the respondents agreed that the controls are being assessed regularly as in the table above. 0% strongly agreed and strongly disagreed to this. In conclusion 19% agreed that the controls over policy implementation are regularly assessed and 81% disagreed.

#### **4.5 EVALUATION OF ZETDC CONTROLS OVER REVENUE MANAGEMENT POLICY**

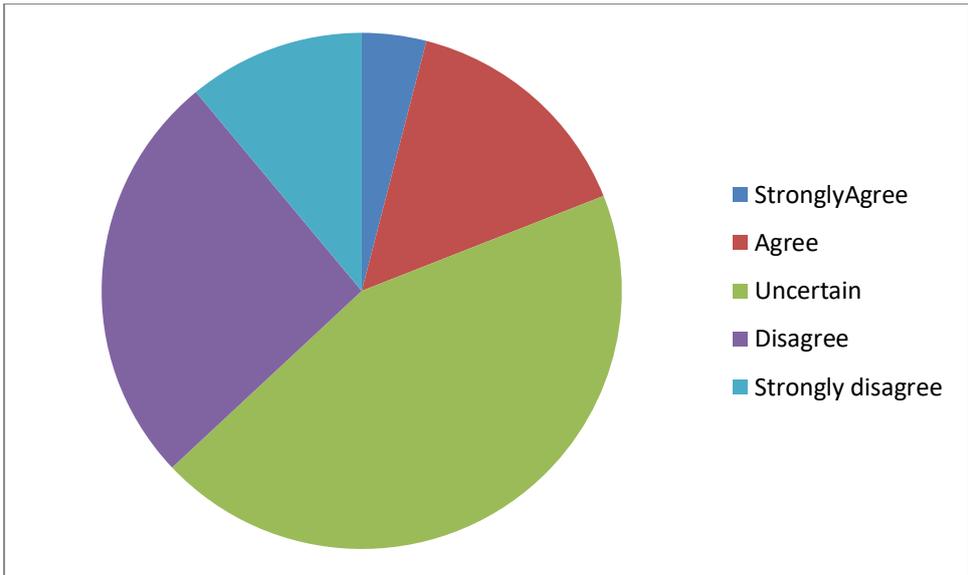
**An independent committee analyses controls over implementation of the revenue management policy at ZETDC**

**Table 4.16: Responses on the analysis of controls over policy implementation by an independent committee**

	Strongly Agree	Agree	Uncertain	Disagree	Strongly disagree
Number of people	1	4	12	7	3
Percentage	4%	15%	44%	26%	11%

*Source ; Primary Data*

The table above alternatively shows the data in the pie chart below.



**Fig 4.11 Responses on the analysis of controls by an independent committee**

The bulk of the responses given were uncertain if the company has an independent committee that analyses controls over the revenue management policy. This is supported by the 12 respondents shown in the table above. 7 respondents disagreed and 4 were in agreement of it. 1 respondent strongly agreed and 3 strongly disagreed that an independent committee analyses over the implementation of controls. In conclusion 19% agreed and 81% disagreed.

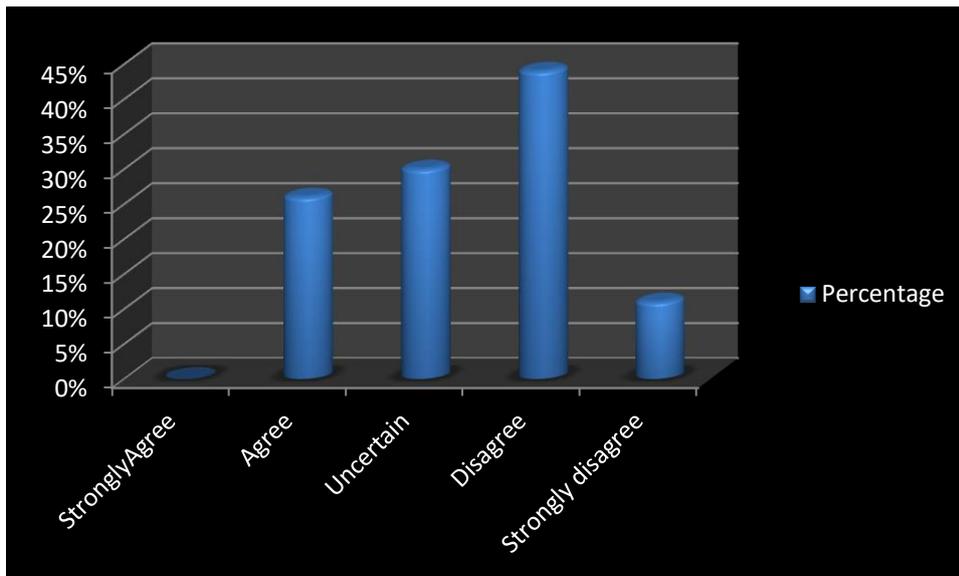
**The policy is assessed frequently**

**Table 4.17: Responses to the frequent assessment of the policy in place**

	Strongly Agree	Agree	Uncertain	Disagree	Strongly disagree
Number of people	0	7	8	9	3
Percentage	0%	26%	30%	44%	11%

*Source; Primary data*

0% strongly agreed that the policy in place is frequently assessed, 7% agreed, 8% were uncertain, 44% disagreed and 11% strongly disagreed. In conclusion, 26% agreed that the policy is frequently assessed and 74% disagreed. The following graph represents the same data as in the table above for better interpretation and understanding.



**Fig 4.12 The frequent assessment of the policy in place**

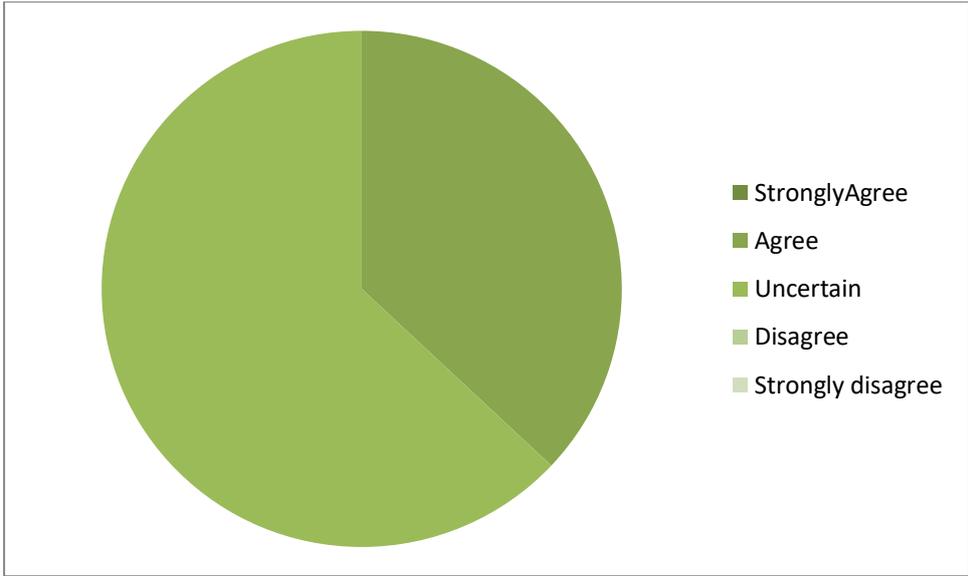
**A cost-benefit analysis is carried out by management before policy implementation**

**Table 4.18: Responses to the carrying out of a cost – benefit analysis before policy implementation**

	Strongly Agree	Agree	Uncertain	Disagree	Strongly disagree
Number of people	0	10	14	3	0
Percentage	0%	37%	63%	0%	0%

*Source ; Primary data*

0% strongly agreed that a cost benefit analysis is undertaken before policy implementation. 37% agreed, 63% were uncertain, 0% disagreed and 0% strongly disagreed. To conclude the data presented above 37% agreed that a cost benefit analysis is carried out before the implementation of the policy and 63% disagreed. The pie chart below represents the information in the table above alternatively for a better understanding.



**Fig 4.13 The carrying a cost benefit analysis before revenue policy implementation**

**Actual revenue collected is compared against the budgeted for variance analysis**

**Table 4.19: Responses to the comparisons of actual and budgeted revenue collected**

	Strongly Agree	Agree	Uncertain	Disagree	Strongly disagree
Number of people	0	5	9	13	0
Percentage	0%	19%	33%	48%	0%

*Source; Primary Data*

Thirteen respondents agreed that actual revenue collected in not being compared against the budgeted revenue for variance analysis. Nine were uncertain if the actual revenue collected by the company is being compared to the budgeted as illustrated in the table above. This calls for the questioning of the internal controls in place over revenue collection. However, five respondents agreed that the revenue collected is being compared against the budgeted. No one strongly agreed and strongly disagreed as shown in the table above. In conclusion 19% agreed and 81% disagreed.

**Investigations are carried out if any variances arise.**

**Table 4.20: Responses to the carrying out of investigations if any variances arise**

	Strongly Agree	Agree	Uncertain	Disagree	Strongly disagree
Number of people	0	6	7	14	0
Percentage	0%	22%	26%	52%	0%

*Source; Primary Data*

The data collected show that mostly investigations are not carried out if any variances rise after comparing the revenue collected and the budgeted. This is supported by the 52% shown in the table above. 26% of the respondents were uncertain if the investigations are being carried out but 22% however agreed fully that investigations are being carried out if any variances arise. The data presented above concludes that 22% agreed and 78% disagreed.

#### **4.6 REVIEWS OF CONTROLS ON POLICY IMPLEMENTATION ON ZETDC**

**Reviews are done regularly over controls on revenue management policy implementation**

**Table 4.21: Responses on if reviews are done regularly over controls on revenue management policy implementation**

	Strongly Agree	Agree	Uncertain	Disagree	Strongly disagree
Number of people	0	4	7	13	3
Percentage	0%	15%	26%	48%	11%

*Source ; Primary Data*

13 respondents disagreed that reviews are done regularly over controls on the policy implementation. This means it is more confirmed that such reviews are most likely not being done frequently. This is supported by the 48% shown in the table above. 7 respondents however, were uncertain about the reviews and four agreed that the reviews are being done regularly. No one however, strongly agreed and 3 respondents strongly disagreed. In conclusion 15% agreed and 85% disagreed.

### Compliance with the controls of the policy is reviewed

**Table 4.22: Responses on the reviews of compliance with the controls of the policy**

	Strongly Agree	Agree	Uncertain	Disagree	Strongly disagree
Number of people	0	6	8	13	0
Percentage	0%	22%	30%	48%	0%

*Source ; Primary Data*

Most respondents disagreed that the compliance with the controls is being reviewed. This becomes an area of concern as 48% of the respondents disagreed as illustrated in the table above. 30% were uncertain of it but 22% of the respondents agreed that the compliance with the controls of the policy is being reviewed. 0% strongly agreed and strongly disagreed. In conclusion 22% agreed and 78% disagreed.

### The controls are upgraded frequently.

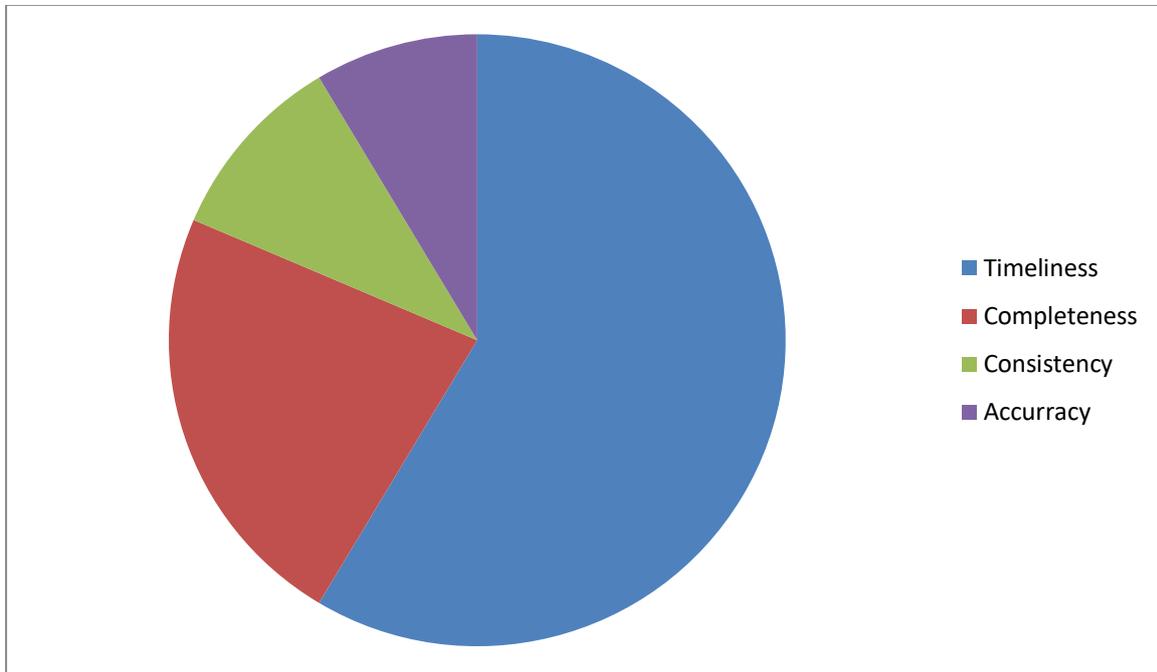
**Table 4.23: Respondents on the frequent upgrading of the controls in place**

	Strongly Agree	Agree	Uncertain	Disagree	Strongly disagree
Number of people	0	6	5	16	0
Percentage	0%	22%	19%	59%	0%

*Source ; Primary Data*

The data collected showed that most of the responses given disagreed that the controls are being upgraded frequently. This is illustrated by the 59% of the respondents in the table above. 19% of the respondents were not sure if the controls are being upgraded regularly but 22% of the respondents were affirmative that the controls are being upgraded. 0% strongly agreed and 0% strongly disagreed. 22% agreed and 78% disagreed in conclusion.

**The prepayment system has positively influenced the revenue management of the company as shown below**



**Fig 4.14 Positive influence of the prepayment system on revenue management**

#### **Challenges being met in the implementation of revenue management policy**

Most of the respondents strongly agreed that the revenue management policy is posing a lot of challenges. The objectives of the prepayment revenue management policy seem to have come under threat after consumers started tempering with the meters. The Managing director, Mr J Chinembiri strongly supported that meter tempering has resulted in ZETDC losing US \$10 million monthly in potential revenue since October 2013. Targeted monthly revenue is about US \$70 million but the company is getting about US \$60 million resulting in an adverse variance of approximately 10% every month against about \$900 million debt to be settled by the company. This drop in revenue has affected operations at such a time when the country is facing power shortages for it can only generate 1200 megawatts against a high demand of 2200 megawatts.

### **Other recommendations suggested which may be considered as better revenue management practices**

20% of the respondents were of the opinion that ZETDC must resort back to the prepaid meters. 30% were of the view that the company must be customer based. This means the company must know and fully understand the needs of the customer. In satisfying these requirements then revenue collection is guaranteed. Most of the respondents were of the view that the prepayment revenue collection must continue to be in use but necessary improvements on weaker areas should be done. In doing this then the prepayment system can be an effective revenue management practice. This is supported by the 50% of the respondents who were of this opinion.

### **4.7 Summary**

This chapter outlines the presentation and data collected from interviews and questionnaires. It shows the questionnaire response rate, interview response rate, detailed responses from interviews, detailed responses from questionnaires on the existence of a revenue management policy at ZETDC, the policy implementation guidelines, controls in place over revenue management policy at ZETDC, the evaluation of controls in place, the challenges being met in the implementation process, the controls over revenue implementation and other revenue management practises. The following chapter brings about the recommendations to the company in relation to the information collected in chapter 4.

## CHAPTER 5

### SUMMARY, CONCLUSION AND RECOMMENDATIONS

#### 5.0 INTRODUCTION

Chapter five sums up the findings made and provide recommendations on how the company must improve the effectiveness of prepayment system as a revenue management tool.

#### 5.1 Summary of Chapters

This research aimed at analysing the effectiveness of the use of prepaid meters as a revenue management tool( A case of Zimbabwe Electricity Transmission and Distribution Company 2012- 2014). Chapter one included the background of study, research problem, main research question, sub research question, research objectives, significance of the study, delimitation of the study, limitations of the study and the definition of terms.

Chapter two covered a review of available literature on various revenue management policies, an analysis of policy implementation guidelines, personnel capabilities required to implement the guidelines, challenges being faced in revenue management and an evaluation of the best practice in revenue management.

Chapter three looked at the research design used, population, sample design, the research instruments applied and the data presentation and analysis. The research design used was the descriptive method during research. The population for the study was the Prepayment department, Human Resources department and the Finance department of the company. Interviews were carried out and questionnaires were issued to personnel in these departments.

Chapter four covered on the data presentation and analysis. 35 questionnaires were distributed and 27 were returned. The response rate was 71%. 5 officers were interviewed and all the interviews were carried out successfully. The interview response rate was therefore, 100%.

## **5.2 MAJOR FINDINGS**

Since the incorporation of ZETDC, the company used the conventional billing system before the introduction of prepaid meters which posed a lot of challenges. Customers refused to pay their bills, arguing ZESA's billing system. November 2012 ZESA was owed more than US \$600 million approximately 60% by domestic and 40% by commercial consumers which the company desperately needed to maintain infrastructure. As a result of this ZESA also struggled to settle its foreign debts. The company then embarked on a prepayment metering project towards the end of the third quarter of 2012. The objective of the installations of prepaid meters was to improve efficiency usage, ZESA's revenue flows and denting the debt consumers who owe the power utility.

The objectives of the prepaid metering seem to have come under threat after consumers started tampering with the meters. ZESA is losing US \$10 million monthly in potential revenue since October 2013. Targeted monthly revenue is about US \$70 million but the company is getting about US \$60 million resulting in an adverse variance of approximately 10% every month.

The data collected presented that the prepayment system is functioning and formally documented at ZETDC as supported by the greater part of the respondents agreeing. The data also support that there are policy implementation guidelines and are authorised by reliable management. This shows the great work being done by management at ZETDC.

To a greater extent however, the data collected showed that there are no essential controls over the prepaid meters which is being the cause of high electricity theft. The company is resorting to other sectors of revenue management and being reluctant on the issue of controls. The data collected has proved that minor controls are being applied over the prepaid meters as supported by the large number of respondents disagreeing that there are essential controls in place over the meters.

The few and minor controls in place are not clearly defined to personnel. This shows that top management may not be effectively communicating the controls over the management policy. The controls in place are not being regularly assessed and evaluated. The company does not have an independent committee that is frequently assessing controls over prepaid meters.

The data collected also illustrated that the prepayment policy is not being regularly assessed. The company is not giving special attention to the controls over the prepaid meters.

The actual revenue collected is being compared against the budgeted but not on a more frequent basis and in the case that a variance rise the company is not undertaking through investigations. The policy needs to be reviewed frequently to notice its progress or defaults but the company is not regularly reviewing the prepayment system in place. The compliance to the controls in place is not being assessed on a frequent rate.

Compliance is of great importance when controls come to light. Controls need to be upgraded frequently as well but the findings have proved that the controls over the revenue management policy. The major findings were on the controls in place over the prepayment system which have proved to be ineffective and inefficient as supported by the data collected. This gives an insight to the company to pay special attention to the controls in place over the prepayment system.

The major challenge at ZETDC in relation to the prepayment system is electricity theft. Customers are tampering around with the meters and getting free access to the service. Many respondents have supported the system but have suggested that improvements need to be undertaken by the company. If done well then the system would become an effective revenue management tool. The data collected also showed that the revenue management policy has not been well communicated to customers.

The customers were also fully addressed on the guidelines over the use of prepaid meters. This has resulted in a number of customers resisting the prepayment system thus posing another challenge to the company. Most respondents agreed that implementation guidelines are in place but compliance to them is lacking. There is minimal compliance to the implementation guidelines over the revenue management policy. This may be as a result of the guidelines not being clear to personnel. This is because that the data collected supported that the implementation guidelines were not well communicated to personnel.

### **5.3 RECOMMENDATIONS**

From the information collected and analysed in chapter four it has been noted that the prepayment system can be an effective revenue management tool if improved on its areas of

weaknesses. The system has major defaults on controls in place over prepaid meters and these areas need to be addressed well in helping improve the system. For the revenue management policy to be effective the top management has to give special attention over the controls in place.

Prepaid meters are electronic gadgets which can help effectively in the revenue collection. IDEaS revenue insights(2004) state that information Technology gadgets and systems have made an impact in the revenue management of most companies. The gadgets have enabled entities to quickly and efficiently carry out their operations therefore increasing revenue collection. Systems help in determining correct pricing for products and services. The systems can generate more accurate forecasts over revenue collection using the company transaction data transaction data.

GGFOA annual conference report(2013) suggests that although Information technology gadgets are playing a pivotal role in revenue management controls have to be put in place over these gadgets. When developing the prepaid meters, the finance department of the company should be involved in the process as well. This is done for the department to clearly outline what is expected of the prepaid meters in their functionality. The prepaid meters should be appropriate with the requirements of revenue collection.

Joel Black and Tim Lyons(2013) suggest that usually companies outsource its system or gadgets, in such a case it is of great importance that during its development the company should send representatives to participate in this process.

ZTE Corporation a Chinese company provides 40% of the prepaid meters required for the project. Nyamazela of South Africa 15% , locally Solahart 25% and Finmark 20%. ZETDC must participate in the process of developing the prepaid meters. This helps to note if the prepaid meters being designed are being compatible with the revenue collection system of ZETDC.

The internal information technology department or engineering section would be the appropriate people to be involved in the development of the software of the prepaid meters for revenue collection purposes. The internal Information Technology department should check the prepaid meters from ZTE, Solahart and Finmark before being used in the company. It must not be a matter of just taking the prepaid meters from these suppliers without checking them first.

The Association of Accountants and financial professionals in business handbook(2013)states that it is recommendable that the company internally generate the system or software for revenue collection as the people involved in the development of the system would be more appropriate with the company. This implies that ZETDC must internally generate the prepaid meters than out sourcing. This is because the employees know fully the system in use, its loopholes that need attention and even the upgrades needed concerning the system. This means the prepaid meters designed internally are more reliable.

The company can apply the use of an external party to check the prepaid meters in use and evaluating the functionality of the whole system. An expert from outside should check the reliability of the prepaid meters in collecting revenue. The expert should be independent from the people involved in the designing and development of the prepaid meters. This helps to increase reliability over the prepaid meters reduce the risk involved in collection of revenue.

The COSO framework and SOX Compliance(2013) states that the revenue collected should be equal to the service provided. In developing the prepaid meters, the software should be able to pick every transaction. The prepaid meters should be able to show on the same face the revenue collected and service provided for comparability purposes. There is therefore need for the prepaid meters to be tested if it is picking every transaction before being in use. The company can request for a sample to be in use for a period of time to assess the effectiveness of the prepaid meters in relation to revenue collection.

Internal control- Internal framework(2005) states that when a company is purchasing a gadget for collecting revenue the company has to question the reliability of the supplier. A strict investigation on ZTE, Solahart and Finmark should be carried out. It is more advantageous to confirm with other companies acquiring from the same suppliers. The reputation of the supplier from other companies is valid. It is therefore important for ZETDC to consult from a number of companies before selecting a supplier. The prepaid meters can be spread over a number of suppliers so as to reduce the risk of defaults from one supplier.

COSO internal control-internal framework executive summary(2013)state that when the gadgets have been implemented then reconciliations should be carried out. On a daily or weekly basis the ZETDC must reconcile the electricity being consumed with revenue collected. The units shown by the prepaid meters should tally with the revenue collected. ZETDC has to recruit an employee specifically for this task as it requires a lot of work.

The reconciliations can be carried out by an expert from outside on a weekly or monthly basis. An independent person should check the revenue collected with electricity being consumed. The finance department has expected revenue to be collected or budgeted revenue to be collected. Comparisons should be done between the budgeted and actual revenue collected. Any variations should then be traced.

These reconciliations should be done frequently by the finance department. When financial statements are prepared, the statements showing electricity consumed must be attached as well as statements showing revenue collected separately. These statements should also be prepared by different people as well. The reconciliation of the two statements should also be reconciled by a different person as well. This is done so as to objectively check and provide information.

Isibore(2006) states that electric gadgets are used by humans and they are prone to human tampering around with them. When companies are developing gadgets for revenue collection they should be designed in such a way that when tampered with, the company is immediately alerted. ZETDC must design its prepaid meters likewise. The meters can be designed in such a way that if tampered with the prepaid meters can enter into a tampering mode. The meters becomes inactive for use until the company attends to them on its own. Secret codes can be formulated by the ZETDC to remove the meters from tamper mode.

This helps to reduce human interference with the prepaid meters. This helps to rely on the information provided by the gadget as revenue collected or units sold. The customers should have limited access to the prepaid meters. The company can implement its suggestion by Mr J Chinembiri, the Managing Director, in the June 2014 Megawatt bulletin of mounting the meters on poles. The company can also implement its suggestion in the same bulletin of the introduction of smart meters which are more efficient and effective than prepaid meters. This helps in curbing the challenges being posed by prepaid meters.

The prepaid meters must be directly connected with the system of the company. The system should note every transaction or activity involving the prepaid meters. In the case of any misuse of the prepaid meters the system should alarm management. The company must communicate well with its customers on the revenue management policy in place. Flyers can be made with information communicating the prepayment system to customers.

The company can take advantage of the newspapers and well advertise the policy emphasising more on its benefits to customers. If benefits are well outlined customers will positively respond to the policy.

Implementation guidelines over the policy need to be complied with. It is not good enough to set guidelines and not comply with them. Management must carry out tight supervision over the implementation guidelines. Once the implementation guidelines are monitored compliance is made easier. This can however, be effective if the personnel have been clearly addressed on the guidelines. Workshops, handouts and must be used to fully and clearly address personnel on the prepayment system. The workshops must be done frequently to keep on educating personnel until they reach a full understanding of the implementation guidelines.

#### **5.4 CONCLUSION**

The objective of the research was to analyse the effectiveness of the use of prepaid meters as a revenue management tool. The findings proved that the prepayment system can be an effective revenue management tool if areas of weaknesses are fully addressed. The area of major concern was the controls in place and their evaluation over the revenue policy. The objective was fully met and recommendations were given in detail to the company.

#### **5.5 FURTHER RESEARCH**

This study is opened for further research on the analysis of adopting smart meters other than prepaid meters for the company as a revenue management strategy.

## REFERENCE LIST

1. 2012 Internal memorandums
2. 2012 ZETDC Financial Statements
3. 2013 ZETDC Financial Statements
4. 2013 ZETDC Internal memorandums
5. Adrian Palmer and Una McMahon Beattie, (2008), Variable pricing through revenue management: a critical evaluation of affective outcomes , Management Research News, Vol. 31, No. 3 ,pp 39-40
6. Amit, R. and Zott, C. (2001), Value creation in e-business , Strategic Management Journal, Vol. 22 No7, pp 45-56
7. Asao Kohei, Miyamoto Takashi ,Kato Hironori, Emmanuel D. Diaz Crispin , (2013),Comparison of revenue guarantee programs in build-operation-transfer projects, Built Environment Project and Asset Management, Vol. 3 No. 5,pp 300-316
8. Blank, F.F., Baidya, T.K.N. and Dias, M.A.G. (2009), Real options in public private partnership: case of a toll road concession, paper presented at the Real Options Group of the 15<sup>th</sup> Annual International Conference, Turku, June 2007
9. Boston, MA Sieber, S. and Valor-Sabatier, J.V. (2003), Market bundling strategies in the horizontal industry, International Journal of Electronic Commerce, Vol. 7 No. 4,pp 40-46
10. Bryant, K. (2000), Revenue management: how to boost the bottom line, BAHA Hotel, Accountants Conference, Birmingham,February
11. Burgess, S., Bingley, S. and Tatnall, A. (2005), Matching the revenue model and content of horizontal portals , paper presented at Second International Conference on Innovations in Information technology, UAE University, Dubai, UAE
12. Cao, R. and Chai, Y. (2004), The study of the electronic commerce business models , paper presented at IEEE International Conference on Systems, Man and Cybernetics, IEEE.
13. Cathy Burgess Keith Bryant, (2001),Revenue management – the contribution of the finance function to profitability, International Journal of Contemporary Hospitality Management, Vol. 13 No. 4, pp 1-19

14. Chih Chien Chen Zvi Schwartz, (2013), On revenue management and last minute booking dynamics , International Journal of Contemporary Hospitality Management, Vol. 25 No 3, pp 2-21
  
15. Coronado, A.E., Lyons, A.C., Kehoe, D.F. and Coleman, J. (2004), Enabling mass customization: extending build-to-order concepts to supply chains, Production Planning and Control, Vol. 15 No. 4, pp 16 - 55
  
16. Corsten, H. and Goßsinger, R. (2005), Revenue Management, Zeitschrift für Betriebswirtschaft, Nos. 1, pp 56 -77
  
17. Corsten, H. and Stuhlmann, S. (2000), Yield Management als spezielle Ausgestaltung des GAP-Modells des Kapazitätsmanagements, Schriften zum Produktionsmanagement No. 33, Universität Kaiserslautern, Kaiserslautern.
  
18. Davison, A., Burgess, S. and Tatnall, A. (2004), Internet Technologies and Business, Data Publishing, Melbourne.
  
19. De Waal, A.A. and Coevert, V. (2007), The effect of performance management on the organizational results of a bank, International Journal of Productivity and Performance Management, Vol. 56 No 6, pp 18- 30
  
20. De Young, R. (2005), The performance of internet-based business models: evidence from the banking industry, The Journal of Business, Vol. 78 No. 3, pp 42- 56
  
21. Degryse, H. and Onega, S. (2005), Distance, lending relationships and competition , The Journal of Finance, Vol. 60 No. 1, pp 13- 33
  
22. Ely, R.J. (2004), A field study of group diversity, participation in diversity education programs and performance , Journal of Organizational Behavior, Vol. 25 No. 6, pp 60 -71
  
23. Gan, J. and Riddiough, T.J. (2008), Monopoly and information advantage in the residential mortgage market , The Review of Financial Studies, Vol. 21 No. 6, pp 66-70
  
24. Holweg, M. and Miemczyk, J. (2003), Delivering the '3-day car' – the strategic implications for automotive logistics operations , Journal of Purchasing and Supply Management, Vol. 9 No.2, pp12-20
  
25. Iain Greive, (1994), Inland Revenue, Industrial and Commercial Training, Vol. 26 No.3, pp 40-52

26. Kai Ingo Voigt Michael Saatmann Sascha Schorr, (2008), Flexibility and revenue management in the automotive industry , Journal of Enterprise Information Management, Vol. 21 No.5, pp 23 -40
  
27. Kenton B. Walker Eric N. Johnson, (2001), Planning a revenue stream system in an e business environment , Industrial Management & Data Systems, Vol. 101.No.3 pp 20-24
  
28. Lemos, T., Eaton, D., Betts, M. and Tadeu de Almeida, L. (2004), Risk management in the Lusoponte concession: a case study of the two bridges in Lisbon, Portugal , International Journal of Project Management, Vol. 22 No. 1, pp 50- 61
  
29. Manandhar, R. and Tang, J.C.S. (2002), The evaluation of bank branch performance using data envelopment analysis – a framework , Journal of High Technology Management Research, Vol. 13 No.3, pp 67 -73
  
30. Manandhar, R. and Tang, J.C.S. (2002), The evaluation of bank branch performance using data envelopment analysis – a framework , Journal of High Technology Management Research, Vol. 13 No. 1,pp 77 -80
  
31. Mathies, C. and Gudergan, S. (2007), Revenue management and customer centric marketing how do they influence travellers' choices?, Journal of Revenue and Pricing Management, Vol. 6 No.5, pp 45 -60
  
32. McDonald, M., Rogers, B. and Woodburn, D. (2000), Key Customers – How to Manage Them Profitably, Butterworth-Heinemann, Oxford.
  
33. McMahan-Beattie, U. (2006), Trust and revenue management , Journal of Revenue and Pricing Management, Vol. 4 No.2, pp 35- 52
  
34. McMahan-Beattie, U., Yeoman, I., Palmer, A. and Mudie, P. (2002), Customer perceptions of pricing and the maintenance of trust, Journal of Revenue and Pricing Management, Vol. 1 No.3, pp 60 -88
  
35. Meisel, J.B. and Sullivan, T.S. (2000), Portals: the new media companies, The Journal of Policy, Regulation and Strategy for Telecommunications, Information and Media, Vol. 2
  
36. Mun, J. (2005), Real Options Analysis: Tools and Techniques for Valuing Strategic Investments and Decisions, 2nd ed., John Wiley & Sons Inc, Hoboken, NJ.
  
37. Nagar, V. (2002), “Delegation and incentive compensation”, The Accounting Review, Vol. 77 No.4, pp 23-45

38. Nagar, V. (2002), Delegation and incentive compensation, The Accounting Review, Vol. 77 No. 2, pp 68- 82
39. Nielsen, J.F., Bukh, P.N.D. and Mols, N.P. (2000), Barriers to customer-oriented management accounting in financial services , International Journal of Service Industry Management, Vol. 11 No.3, pp 35-60
40. Noone, B.M., Kimes, S.E. and Renaghan, L.M. (2003), Integrating customer relationship management and revenue management: a hotel perspective , Journal of Revenue & Pricing Management, Vol. 2. No.2, pp 45 -60
41. November 2012 Megawatt bulletin
42. O'Brien, R.M. (2007), A caution regarding rules of thumb for variance inflation factors , Quality& Quantity, Vol. 41 No. 5, pp 34 -50
43. Panzer, S. (2008), "Rural development and social embeddedness: banks and businesses in Thuringia, Germany", in Tamasy, C. and Taylor, M. (Eds), Globalising Worlds and New Economic Configurations, Ashgate Publishing, Farnham
44. Paradi, J.C., Rouatt, S. and Zhu, H. (2011), Two-stage evaluation of bank branch efficiency using data development analysis, OMEGA – The international Journal of Management Science, Vol. 39 No. 1, pp 56 -70
45. Pearlson, K.E. (2001), Managing and Using Information Systems: A Strategic Approach, Wiley, New York, NY
46. Petersen, T., Penner, A.M. and Hogsnes, G. (2010), The within-job motherhood wage penalty in Norway, 1979-1996, Journal of Marriage and Family, Vol. 72 No. 5, pp 56-68
47. Ruben Mangold, (2013),Determinants of bank advisor revenues, International Journal of Productivity and Performance Management, Vol. 62 .No.5, pp 60-77
48. Saporito, P.A., Chen, C.C. and Sapienza, H.J. (2004), The role of relational trust in bank-small firm relationships , The Academy of Management Journal, Vol. 47.No 4,pp 87 -93
49. Schneider, G.P. (2004), Electronic Commerce, the Second Wave, Course Technology
51. Stephen Burgess Arthur Tatnall, (2007), A business revenue model for horizontal portals , Business Process Management Journal, Vol. 13No.6 , pp88- 78
52. Stephen Procter Graeme Currie, (2002), How team working works in the Inland Revenue: meaning, operation and impact, Personnel Review, Vol. 31 No.5,pp 45 -60

53. Wirtz, J., Kimes, S., Ho, J. and Patterson, P. (2003), Revenue management: resolving potential customer conflicts, Journal of Revenue and Pricing Management, Vol. 2 No.3, pp 45- 67
54. Xuan Lorna Wang David Bowie, (2009),Revenue management: the impact on business to business relationships, Journal of Services Marketing, Vol. 23 No.5, pp 87 -93
55. Xuan Lorna Wang, (2012), The impact of revenue management on hotel key account relationship development , International Journal of Contemporary Hospitality Management, Vol. 24 No5, pp 88- 78
56. [www.bdlive.co.za](http://www.bdlive.co.za)( accessed on 3.08.14)
57. [www.financialgazette.co.zw](http://www.financialgazette.co.zw)( accessed on 9.08.14)
58. [www.thezimbabwean.co.uk](http://www.thezimbabwean.co.uk) (accessed on 12.08.14)
59. [www.voazimbabwe.com](http://www.voazimbabwe.com) (accessed on 18.08.14)
60. [www.zesa.co.zw](http://www.zesa.co.zw) (accessed 20.08.14)

## **Appendices**

### **Appendix I: COVER LETTER**

Midlands State University

Faculty of Commerce

Department of Accounting

P. Bag 9055

Gweru

ZETDC Head Office

25 Samora Machel

Harare

9 October 2014

Dear Sir / Madam

#### **Re: Research Project Assistance**

I am a final year student at Midlands State University studying Bachelor of Commerce Accounting Honours Degree. I am kindly seeking your permission to carry out my research on the topic: **An analysis of the use of prepaid meters as a revenue management tool.**

I wish to administer questionnaires and carry out interviews at your company. The information will be strictly used for academic purposes and a high level of confidentiality shall be maintained. Thank you for your time and cooperation.

Yours Faithfully

Rumbidzai Chirewo

R111914W

## APPENDIX II: QUESTIONNAIRE

### Questionnaire for Management and Accountants

An analysis of the use of prepaid meters as a revenue management tool: A case study of Zimbabwe Electricity Transmission and Distribution Company(ZETDC).

#### Instructions

1. Do not write your name on the questionnaire.
2. Show response by ticking the respective answer box and fill in the relevant spaces provided.

#### Questions

##### Personal Questions

1. Gender: Male  Female

2.1 Position held.....

Prepaid meters manager  Supervisor  Accountant  HR Manager

Others

(specify).....

##### 2.2 Department

Prepaid meters  Finance and Admin  Human Resources

Others (specify).....

##### 3. You have been in the department for:

Less than 1yr  1-5yrs  6-10yrs  More than 10yrs

Others (specify).....

##### 4. Your experience in the current position

Less than 1yr  1-5yrs  6-10yrs  More than 10yrs

Others (specify) .....

##### 5. Your highest academic qualification

‘A’ Level                  Diploma                  Degree                  Masters                  Doctorate  
 Others (specify) .....

.....

**6. The following relates to the revenue management policy.**

	Strongly Agree	Agree	Uncertain	Disagree	Strongly disagree
(i)ZETDC has a revenue management policy.					
(ii)The policy is formally documented.					
(iii)The revenue management policy is clarified to customers for better					
(iv)The policy is fully-addressed to management.					

**7. Details concerning policy implementation guidelines.**

	Strongly Agree	Agree	Uncertain	Disagree	Strongly disagree
(i)There are revenue management policy implementation guidelines at ZETDC.					
(ii)The policy implementation guidelines are documented.					
(iii)Prepay meters guidelines are also available to customers					
(iv)Implementation guidelines are always complied with.					
(v) The implementation guidelines are clarified to personnel for better understanding.					

**8. The following includes controls in place over revenue management policy of ZETDC.**

	Strongly Agree	Agree	Uncertain	Disagree	Strongly disagree
(i)Revenue management policy implementation controls are in place at					
(ii)The controls over revenue management policy are clearly defined.					
(iii)Revenue management policies are authorized by reliable management before they are implemented.					
(iv)The controls over implementation of the revenue policy are regularly assessed by management.					

**9. The following information relates to the evaluation controls of ZETDC revenue management policy.**

	Strongly Agree	Agree	Uncertain	Disagree	Strongly disagree
(i)An independent committee analyses controls over implementation of the revenue management policy at ZETDC.					
(ii)The policy is evaluated frequently.					
(iii)A cost-benefit analysis is carried out by management before policy implementation.					
(iv)Actual revenue collected is compared against the budgeted for variance analysis.					
(v)Investigations are carried out if any variances arise.					

**10. The following challenges are being faced in implementing the revenue management policy.**

	Strongly Agree	Agree	Uncertain	Disagree	Strongly disagree
(i) Resistance from customers.					
(ii) Inadequate resources for implementing the policy.					
(iii) Reduced personnel commitment to the policy.					
(vi) Limited information on the revenue management policy.					

Any other  
(specify).....  
.....

**11. Information relating to the reviews of controls on policy implementation at ZETDC is as follows.**

	Strongly Agree	Agree	Uncertain	Disagree	Strongly disagree
(i) Reviews are done regularly over controls on revenue management policy implementation.					
(ii) Compliance with the controls of the policy is reviewed.					
(iii). The controls are upgraded frequently.					

**12. The prepayment system positively influenced the following in relation to revenue management of the company.**

	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree
(i) Accuracy					
(ii) Timeliness					
(iii) Completeness					
(iv) Consistency					

**13. Any other recommendations which you may consider as better practices for revenue management**

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**Thank you for your cooperation**

### **APPENDIX III: INTERVIEW QUESTIONS**

- a) Are you directly involved in the process of revenue collection?
- b) Why was the prepayment revenue system introduced?
- c) What are the effects of the introduction of the prepayment as a revenue management tool?
- d) How was the prepayment policy implemented?
- e) What challenges are you facing due to the introduction of prepaid meters?
- f) How efficient and effective is the prepayment system?
- g) What other methods of revenue collection can be used along with the prepayment system?
- h) What are the controls in place over the prepaid meters?
- i) What method of revenue collection do you think is the best?
- j) Is the prepayment system convenient compared to the conventional billing system?
- k) Is the prepayment system increasing the revenue collection?
- l) What are the benefits that the organisation is enjoying due to the introduction of the prepayment system?
- m) What the problems brought by the prepayment system if any?

