INFORMATION RESOURCE MANAGEMENT IN THE MINISTRY OF PETROLEUM RESOURCES, ABUJA, NIGERIA

BY

SARAH HAMIDU GADZAMA
MLS/EDUC/10408/2007-08

A THESIS SUBMITTED TO THE POSTGRADUATE SCHOOL AHMADU BELLO UNIVERSITY, ZARIA

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF LIBRARY AND INFORMATION SCIENCE, FACULTY OF EDUCATION, AHMADU BELLO UNIVERSITY, ZARIA.

DECEMBER, 2014.

DECLARATION

I hereby declare that this thesis entitled *"Information Resource Management in the Ministry of Petroleum Resources, Abuja, Nigeria"* for the award of the degree of Master of Library and Information Science is entirely the result of my own independent investigation and has not been presented either wholly or partly for any other degree in any higher institution of learning in Nigeria.

All quotations are indicated and sources of information are duly acknowledged by means of references.

Sarah Hamidu Gadzama	**Signature/Date**

CERTIFICATION

The thesis titled *Information Resource Management in the Ministry of Petroleum Resources Abuja, Nigeria* by Sarah Hamidu Gadzama *has* met the requirements for the award of Master of Library and Information Science of the Ahmadu Bello University Zaria, and is approved for its contribution to knowledge and literary presentation.

_____ _____

Prof. Innocent I. Ekoja ***Date***
Chairman, Supervisory Committee

_____ _____

Prof. Tijani Abubakar ***Date***
Member, Supervisory Committee

_____ _____

Dr. Abdullahi I. Musa ***Date***
Head of Department

_____ _____

Prof. A.Z. Hassan ***Date***
Dean, Postgraduate School

DEDICATION

This is dedicated to my beloved parents, the late Mr. and Mrs. Hamidu Aduwa Gadzama who encouraged me to complete this study before they passed on to glory to be with the Lord.

ACKNOWLEDGEMENT

First, I want to express my gratitude to the Almighty God for His mercies, grace and inspiration, which enabled me to successfully complete this research work.

I sincerely wish to acknowledge the invaluable contributions of those whose assistance led to the completion of this Master Programme. Firstly, my immense and special appreciation and gratitude go to my major supervisor, Prof. I. I. Ekoja, who devoted his time out of his tight schedules and carefully read through my work and guided me on how to articulate my points. I also appreciate Prof. Tijjani Abubakar who took time to read through this thesis and made necessary corrections in order to bring this work to fruition. On the same note, I sincerely appreciate my external examiner, Prof. A.A. Balarabe, who devoted his time to read through this work, word to word, and page to page and made his immense contribution to perfect this thesis. May Almighty God crown his effort.

My thanks go to Prof. Umar Ibrahim, Mr. Baba Aduku and Dr. Ezra Gbaje whose great assistance reinstated me into the Master programme. I also acknowledge all the staff (Lecturers and Management staff) of the Department of Library and Information Science for their encouragement and cooperation showed to me while undergoing this programme. I wish to also acknowledge my brothers and late parents for encouraging me to complete this studies.

Finally, I acknowledge my little angels, Victoria and Jessica, and my husband for their moral support while I was undertaking this study.

TABLE OF CONTENT

CONTENTS		PAGES
Title Page	- - - - - - - -	i
Declaration	- - - - - - - - -	ii
Certification	- - - - - - - - -	iii
Dedication	- - - - - - - - -	iv
Acknowledgement	- - - - - - - -	v
Table of Contents	- - - - - - - -	vi
Pie Chart	- - - - - - - - -	xi
List of Tables	- - - - - - - - -	xii
List of Figures	- - - - - - - -	xiv
List of Appendices	- - - - - - - -	xvi
List of Abbreviations	- - - - - - - -	xvii
Abstract	- - - - - - - - -	xix
CHAPTER ONE: INTRODUCTION	- - - - -	1
1.1 Background to the Study	- - - - - -	1
1.2 History of the Nigerian Petroleum Industry	- - - - -	7
1.3 Statement of the Problem	- - - - - -	12
1.4 Research Questions	- - - - - - -	15
1.5 Objectives of the Study	- - - - - -	16
1.6 Significance of the Study	- - - - - -	17
1.7 Scope and Limitation	- - - - - - -	19
Operational Definition of Terms	- - - - -	20
References	- - - - - - - - -	24

CHAPTER TWO: REVIEW OF RELATED LITERATURE

2.1 Introduction - - - - - - - - 26

2.2 The Concept of Information Resources and Information Resource Management in Organizations - - - - 26

2.3 Data and Information Resource Creation and Generation in Public Organizations - - - - - 39

2.4 Types of Information Resources Generated in Organizations- - 46

2.5 Electronic Information Resources in Organizations -- - - 48

2.6 Information Resource Acquisition, Processing, and Dissemination in Public Organizations - - - - 51

2.7 Information Organization, Storage and Retrieval Methods in Organizations - - - - - - - 56

2.8 Methods and Mechanisms of Processing Information Resources in Public Organizations - - - - - 58

2.9 Information Management in Public Organizations - - - 60

2.10 Protection, Security and Preservation of Information Resources in public organization - - - 68

2.11 How Information Resources are Used by Managers - - - 74

2.12 Personnel/Officers Involved in IRM in Public Organizations - 79

2.13 Effects of Information and Communication Technology on Information Resource Management in Organizations - - 81

2.14 Factors Influencing Information Resource Management in Public Organizations - - - - - - - 87

References - - - - - - - - 90

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction - - - - - - - - 97

3.2 Research Method Adopted - - - - - - 97

3.3 Population of the Study - - - - - - 98

3.4 Sample Size - - - - - - - - 99

3.5 Sampling Techniques - - - - - - - - 100

3.6 Instruments for Data Collection - - - - - 101

3.7 Procedure for Data Collection - - - - - 102

3.8 Data Presentation, Analysis and Presentation - - - - 102

References - - - - - - - - 104

CHAPTER FOUR: DATA PRESENTATION AND ANALYSIS

4.1 Introduction - - - - - - - - 105

4.2 Types of Library/Information Centre Available in the MPR - - 105

4.3 Type of Information Resources Generated in the MPR - - 107

4.4 Methods Used to Generate Information Resources in the MPR - 109

4.5 Equipments Available for Information Resource Processing in the MPR - - - - - - - - 111

4.6 Assessment of How Information Resources input/Processed, storage, Retrieved and Dissemination in the MPR - - - 112

4.6.1 Technologies Used to Input Information Resources in the MPR - 112

4.6.2 Technologies Used for Storing Information Resources in the MPR - 113

4.6.3 Technologies Used for Retrieving Information Resources in the MPR 115

4.6.4 Methods Used for Dissemination of Information Resources in the MPR 116

4.7 Effects of ICT on Information Resource Management in the MPR - - - - - - - - 118

4.8 Assessment of How the Use of ICT on Information Resource Management Enhanced Staff Activities and Productivity in the MPR - - - - - - - - 120

4.9 Types of ICT Facilities Available for IRM in the MPR- - - 122

4.10 Assessment of Personnel/Officers involved in IRM in MPR - - 123

4.10.1 Categories/Qualification of Personnel/Officers Involved in IRM in MPR- - - - - - - - - 123

4.10.2 Adequacy of the Personnel/Officers Involved in IRM in the MPR - - - - - - - - 125

4.10.3 Training and Development Programmes for Personnel/Officers Involved in IRM in the MPR - - - - - - 126

4.11 Facilities Used for the Protection, Security and Preservation of IR in MPR - - - - - - - - 128

4.11.1 Facilities Used for the Protection of IR in the MPR - - - 128

4.11.2 Facilities Used for the Security of IR in the MPR - - - 129

4.11.3 Facilities Used for the Preservation of IR in the MPR- - - 131

4.12 Factors Militating Against Effective Information Resource Management in the MPR - - - - - - 132

4.13 Factors Suggested to Improve Information Resource Management in the MPR - - - - - - 134

References - - - - - - - - 138

CHAPTER FIVE: SUMMARY, CONCLUSION, RECOMMENDATIONS AND SUGGESTION FOR FURTHER RESEARCH

5.1 Introduction - - - - - - - - 139

5.2 Summary of the Study - - - - - - 139

5.3 Summary of Finding - - - - - - - 140

5.4 Conclusion - - - - - - - - 142

5.5 Recommendations - - - - - - - 142

5.6 Suggestions for further research - - - - - 145

Appendices

Appendix I: Bibliography - - - - - - 146

Appendix II: Introductory Letter - - - - - 149

Appendix III: Questionnaire - - - - - - 150

Section A: Designation - - - - - - 150

Section B: Types of Library/Information Centre and Information Resources Generated in the Ministry of Petroleum Resources (MPR) - - - - - - 151

Section C: How Information Resources were processed in the MPR - - - - - - 152

Section D: Information Resource Management and ICT in the MPR - - - - - - 153

Section E: Personnel/Officers Involved in IRM in the MPR- - 154

Section F: Factors Militating Against IRM and Factors Suggested to improve IRM in the MPR - - - 155

PIE CHART

TITLE	PAGE
Adequacy of the Personnel/Officers involved in IRM in the MPR - - - - - - - - -	125
How Often Training and Development Programmes for Personnel/Officers involved in the IRM in the MPR - - -	127

LIST OF TABLES

TABLES **PAGE**

Table 3.1 The Population of the MPR - - - - - 98

Table 3.2 The Sample Size Selected for the study - - - 100

Table 4.2 Types of Library/Information Centre Available in MPR - - 106

Table 4.3 Types of Information Resources Generated in the MPR - 107

Table 4.4 Methods Used to Generate Information Resources in the MPR - - - - - - - 109

Table 4.5 Equipments Used for Information Resource Processing in the MPR - - - - - - - 111

Table 4.6:1 Responses on the Technology Used to Input Information Resources in the MPR- - - - - - 112

Table 4.6.2 Responses on the Technology Used for Information Resource Storage Available in the MPR - - - 114

Table 4.6:3 Opinions of the Respondents on the Technology Used for Information Resource Retrieval in the MPR - - - 115

Table 4.6.4 Responses on the Methods Used for Information Resource Dissemination in the MPR - - - - 117

Table 4.7 Opinions of the Respondents on the Effects of Information and Communication Technology on Information Resource Management in the Organization (MPR) - - 119

Table 4.8 Opinions of the Respondents on How the uses of ICT for Information Resource Management Enhances Staff Activities and Productivity in the MPR - - - 121

Table 4.9 Responses on the Types of Information and Communication Technology Facilities Available for Information Resource Management in the MPR - - - - - - - 122

Table 4.10.1 Personnel/Officers involved in Information Resources Management in the MPR - - - - - 123

Table 4.10.2 Adequacy of the Personnel/Officers Involved in IRM in the MPR - - - - - - - 125

Table 4.10.3 How often Training and Development Programmes for Personnel/Officers Involved in the Management Of IRM in the MPR - - - - - - 126

Table 4.11.1 Facilities Used for the Protection of Information Resources in the MPR - - - - - - - 128

Table 4.11.2 Facilities Used for the Security of Information Resources In the MPR - - - - - - - 130

Table 4.11.3 Facilities Used for the Preservation of Information Resources in the MPR- - - - - - 131

Table 4.12 Factors Militating Against Effective Information Resources Management in the MPR - - - - 133

Table 4.13 Factors Suggested to Improve Information Resource Management in the MPR - - - - - 135

LIST OF FIGURES

FIGURES		PAGE
Fig. 1:	Types of Library and Information Centre Available in MPR - - - - - - -	106
Fig.2:	Information Resources Generated in the Different Department of the MPR - - - - -	108
Fig. 3:	Methods Used for Generation of Information Resources in the MPR - - - - - - -	110
Fig.4:	Equipments Used for Information Resources Processing In the MPR - - - - - - -	111
Fig.5:	Technology Used for Information Resource Input in the MPR	113
Fig. 6:	Technology Used for Information Resource Storage in the MPR	114
Fig. 7:	Technology Used for Information Resource Retrieval in the MPR	116
Fig. 8:	Methods Used for Information Resource Dissemination in the MPR- - - - - - -	117
Fig. 9:	Effects of ICT on Information Resource Management in the MPR	119
Fig. 10:	How the Use of ICT on Information Resource Management Enhances Staff Activities and Productivity in the MPR- -	121
Fig. 11	Types of Information and Communication Technology Available for Information Resource Management in the MPR	122
Fig. 12:	Personnel/Officers Involved in IRM in MPR- - -	124
Fig. 13:	Adequacy of the Personnel/Officers involved in IRM in the MPR - - - - - -	125
Fig. 14:	Training and Development Programmes for Personnel/ Officers in the MPR - - - - - -	127
Fig. 15:	Facilities Used for the Protection of Information Resources In the MPR - - - - -- - -	129
Fig. 16:	Facilities Used for the Security of Information Resources in the MPR - - - - - - -	130

Fig. 17: Facilities Used for the Preservation of Information Resources In the MPR - - - - - - - 132

Fig. 18: Factors Militating Against Effective IRM in the MPR - 133

Fig. 19: Factors for Improving Information Resource Management in the MPR - - - - - 135

LIST OF APPENDICES

PAGES

Appendix I: Bibliography - - - - - - - 146

Appendix II: Introductory Letter - - - - - - 149

Appendix III : Questionnaire - - - - - - - 150

Section A: Designation - - - - - - - 150

Section B: Types of Information Resources Generated in MPR - - 151

Section C: How Information Resources was Processed in the MPR - - 152

Section D: Information Resource Management and ICT in the MPR- - 153

Section C: How Information Resources were processed in the MPR - - - - - - - 152

Section D: Information Resource Management and ICT in the MPR - - - - - - - 153

Section E: Personnel/Officers Involved in IRM in the MPR- - - 154

Section F: Factors Militating Against IRM and Factors Suggested to improve IRM in the MPR - - - - 155

LIST OF ABBREVIATIONS

DPR	-	Department of Petroleum Resources
EDI	-	Electronic Data Interchange
E-lib	-	Electronics library
E-mail	-	Electronic Mails
FCT	-	Federal Capital Territory
FIIRO	-	Federal Institute of Industrial Research Oshodi
GDP	-	Gross Domestic Product
G-Mail	-	Goggle Mail
HRM	-	Human Resource Management
MPR	-	Ministry of Petroleum Resources
ICA	-	International Committee on Archives
ICT	-	Information and Communication Technology
IITA	-	International Institute on Tropical Agriculture
IM	-	Information Management
IMD	-	Information Management Department
IR	-	Information Resources
IRMA	-	Information Resource Management Association
IRM	-	Information Resource Management
ISO	-	International Standards Organization
IT	-	Information Technology
LAN	-	Local Area Network
NIIA	-	Nigerian Institute for International Affairs

NNPC	-	Nigerian National Petroleum Corporation
NOC	-	National Oil Company
NOGAHMSC	-	National Oil and Gas Assets Holding and Management Service Company
NPD	-	National Petroleum Directorate
NPRC	-	National Petroleum Research Centre
MIS	-	Management Information System
OPEC	-	Organization of Petroleum Exporting Countries
PDF	-	Portable Document Format
PEF	-	Petroleum Equalization Fund
PIC	-	Petroleum Inspectorate Commission
PPPRA	-	Petroleum Products Pricing and Regulatory Agency
PRS	-	Planning Research and Statistics
PS	-	Permanent Secretary
PTDF	-	Petroleum Technology Development Fund
PTI	-	Petroleum Training Institute
SDI	-	Selective Dissemination of Information
SPSS	-	Statistical Package for Social Sciences
STI	-	Scientific and Technical Information
URL	-	Uniform Resource Location
TETFUND	-	Tertiary Education Trust Fund (formerly Education Trust Fund)
TKSP	-	Technology Knowledge Sharing Program

ABSTRACT

Human efforts towards attaining goals depends highly on effective communication, and the major ingredient that makes communication possible is information. Information is an important resource for individual growth and survival. The progress of modern societies as well as individuals depends a great deal upon the provision of the right kind of information, in the right form and at the right time. Information is needed to be able to take a right decision and also reduce uncertainty. If information is this valuable, it must be put to proper use, that is, made available to people or group of people who need it, after managing it properly. This study examined information resource management in the Ministry of Petroleum Resources, Abuja with particular emphasis on how the information resources were generated/sourced; acquired; processed, used; as well as the strategies used for the protection, security and preservation of the information resources. Also, factors that militated against effective information resource management were examined, as well as the effects of ICT on Information Resource Management. The population of the study was the entire staff of the Ministry of Petroleum Resources, numbering eight hundred from the top management staff down to the middle/junior executive staff. A sampled population was taken from the larger population for the study using Morgan (1970) table for determination of accurate sample size from a given population. The research method adopted was the survey method, with an instrument of the questionnaire. The questionnaire was designed by the researcher in sections corresponding to the major area of information resource management. Two hundred and sixty copies of the questionnaire were administered to the sample size randomly selected. About two hundred and fifty copies of the questionnaire received a positive response and were collected back for data analysis. The raw data scores were analyzed in percentages using the Statistical Package for Social Science (SPSS). It was reported descriptively on tables and also graphically illustrated. The data analysis was designed in such a way that every research question was addressed by using raw scores and their equivalent percentages. The study found out that information resources were not effectively managed in the MPR, based on the following factors: lack of training and workshops, lack of seminars and conferences on information resource management, lack of enough computer personnel to manage the technologies (ICT) available, and lack of adequate knowledge on the use of ICT by most of the staff of the MPR. The study also revealed that the demand for and use of ICT for information work was high, especially for processing information by management staff and information officers in the MPR. However, among all the ICT available at the MPR, the computer, telephone/telecommunications, and files/folders were the most used compared to others. The study also revealed that there was inadequacy of the new information technology (ICT) in most departments of the MPR, and also the absence of a standard electronic library and information centre, which suggested the absence of proper management of information resources. Based on these findings, the researcher recommended that, more ICT equipment and facilities should be provided at the MPR. Also, staff of the MPR should be trained regularly on Information Resource Management. Furthermore, a standard e-library and information centre should be put in place to manage printed and electronic information resources properly. It was also recommended that candidates should possess ICT knowledge before they can be employed into the organization. In conclusion, the researcher suggested further research in similar organizations like the Petroleum Technology Development Fund (PTDF), Tertiary Education Trust Fund (TETFUND), Petroleum Equalization Fund (PEF), Petroleum Training Institute (PTI), Department of Petroleum Resources (DPR) and Petroleum Product Prizing Regulatory Agency (PPPRA), in order to add to knowledge.

CHAPTER ONE

INTRODUCTION

1.1 Background to the study

This study is on "Information Resource Management in the Ministry of Petroleum Resources, Abuja". Information is very complex and difficult, as evident in the various definitions and attributes of the concept. Notwithstanding the fact that information is as old as man, and that it affects and is affected by all aspects of human activities, no consensual definition of the word exists in the literature. Available definitions reflect the emphasis and perhaps prejudice of their proponents. Information is a multi-disciplinary concept, it is against this background that Eliss (1999:2) observes that the data processing manager might conceive it in terms of data, the record manager in terms of records and report, the librarian or information scientists in terms of documents or materials and the rural people in terms of message. The foregoing, according to Ajewole (2001:216), had led to the categorization of information definition into three (3) strands. The first is the scientific and technical information (STI). This is within the domain of scientific and technological communities. The second strand is socio-cultural; in this context, information is viewed as knowledge which is transferable in the conduct of various activities. In the final strand, information is perceived as a basic resource and an indispensable and irreplaceable link between a variety of activities, intellectual and material, in the service of society, institutions and individuals. However, within each of these strands, there is no consensual definition of the concept.

Information is the resources which allows us to change and improve the society, we live in, it unfolds man physically, mentally, socially, politically and spiritually. It is a resource for the acquisition of power, it can be used in making national decisions by

individuals, group of individuals and organizations. The management of information resources, therefore, has become a critical issue in every sphere of life especially in public and government organizations where the right information is needed for decision making to move the nation forward. It is in view of this that the researcher undertook a study on Information Resource Management in the Ministry of Petroleum Resources, Abuja.

Public organizations in Nigeria need to serve as better sources of social and economic transformation by placing emphasis on information resource management. Information resource management helps organizations to maintain accountability, transparency and efficient services. Relevant information services are responsive to the needs of all the management uncertainty in decisions. Information resource management is based on the tenets of generation, acquisition, storage and use of information within the organization.

It is important to define Information Resource Management (IRM) and examine its scope for proper understanding of the activities involved. There are various popular definitions which, put together, gives a holistic picture. Schoneyman (1995:35) defined IRM as the Management (planning, Organization, Operations and control) of the resources (human and physical) concerned with the systems support (development, enhancement and maintenance) and the servicing (processing, transformation, distribution, storage and retrieval) of information (data, text, voice, image) for an enterprise. Mcleod and Brittain-White (1960:28) viewed IRM as the recognition by an organization that data and information are valuable resources and the application of the same principles of managing physical resources such as personnel. Other writers like Burk and Horton (1988:24) are of the view that IRM is the process within the information management area that serves the corporate interest. IRM seeks to harness information for the benefit of the organization as

a whole by exploiting, developing and optimizing information resources. The interest of the organization are usually manifested by its corporate goals and objectives, in their opinion IRM is the managerial link that connects corporate information resources with the organization's goals and objectives. Kerr (1991:15) refers to IRM as simply the belief that information is an asset that should be managed rigorously and can contribute to the success of businesses. Furthermore, O'Brien (1990:22) viewed IRM as the managing of information resources – a major strategic responsibility of both managerial end users and traditional information system management.

There are many definitions in use for IRM, reflecting the various perspectives on the scope and impact of the information resources. One such IRM definition by Hoven (2001:80) can be derived by breaking up the term "information resource management" into its component parts:

1. Information as something told or items of knowledge.
2. Resource as a stock or supply that can be drawn on.
3. Management as the professional administration of business concern.

The above breakdown suggest that all organizational activities have been embraced in every ramification to bring about success.

Information, according to Burch and Grudnitski (1989:13) is important to the success of organizations in achieving their objectives. They maintained that it is "Information that ties all of organization's resources together for better operation, coordination and survival in a competitive environment." Information is the key ingredient of modern organizations and therefore, the management of information is critical in public organizations. Information Resource Management can enable an organization to achieve its goals in a state of unity and harmony; it involves the communication and tapping of

experiences and knowledge in the organization. Public organizations in Nigeria require information to stimulate them to action and to inform them on the outcome of the options to work with. It therefore means that, the management staff in any organization need to manage information properly and disseminate it at the right time to managers who need the information to take decision for effective and efficient managerial operations.

The information management profession actually consists of a number of largely isolated parts. These include librarians, records managers, archivists and computer information system professionals (Atkociunine, 2009:28). Information Resources are assets in organizations. IRM stresses upon information as a resources just as any other resources with a final value established according to information quality criteria (novelty, reliability, precision etc), potential and effectiveness of its application. Atkociuniene (2009) further stressed the fact that Information Resource Management is the engine that is driving the information economy, it has and will continue to have a profound impact on business management, competitive advantage, and productivity. Information resource management is an integral part of corporate strategies and can be used by organizations to gain competitive advantages in their markets. IRM and the management of information resources affect all functional areas and all management levels of an organization. To further emphasize on IRM, Willard (1993:18) in Aslib, proposed a model based on traditional resource management principles which eventually become "The Willard Model", which identified five key elements of IRM.

1. **Identification**: The discovery of information resources and the recording of their features in an inventory.
2. **Ownership:** The establishment of responsibility for the upkeep of an information resources.

3. **Cost and value:** assessment of the cost of an information resources and its value to the organization.

4. **Development:** The further development of an existing information resources to enhance its value to the organization.

5. **Exploitation:** The process which may allow a resource to generate further value through conversion into an asset or a saleable commodity.

Based on the theoretical framework of Willard, Aslib later held a series of other workshops to explore each of the above mentioned elements. The IRM network of Aslib has concluded that the scope and definition and activities under the denotation of Information Resource Management is totally encompassed by knowledge management which is the term used in the latest context in information arena and a natural extension of the ideas of IRM. Knowledge management has structured and functional basis in the Information Management (IM) or Information Resource Management (IRM).

Information Resource Management stresses upon information as a resources just as any other resources like human resources and financial resources in organizations. Information is a resource with a final value established according to information quality criteria (novelty, reliability, precision, etc) potential, and effectiveness of its application. Information Resource Management is the engine that is driving the information economy. It has and will continue to have a profound impact on business management, competitive advantage and productivity. Information resource management is an integral part of corporate strategies and can be used by organizations to gain competitive advantage in their markets. The management of Information Resources had generally affect all functional areas of management levels in organizations.

Information resource management is the organization and control of information; it is interrelated to information management. Uwaifo (2004:3) made a remark that information record/resource is necessary because it contains information that is vital to the daily operations of the organizations and institutions. He further observes that an organization cannot function smoothly and efficiently in the absence of proper information resource management. Similarly, Ibrahim (1999: 45) stressed the need for organizations to facilitate decision making. He opined that the records not well managed are useless and the information functions of any office lies in its ability to manage its information resources well.

Allen (2005:8) undertook a study on information management practices. He asserted that an information management practice is a key focus for many organizations across both public and private organizations. He further stated that information management is driven by some factors which include a need to improve the organization processes, the demand of compliance regulations and desire to deliver new services. This is related to this study because it gives a comprehensive approach to information resource management in public organizations. A more comprehensive study on information resource management which this study found relevant is the work by Frishamma (2002:22). He viewed information resource management as a discipline that analyses information as an organizational resources which cover the definition, uses, values and distributions of data and information within an organization whether processed by computer or not. They emphasized that information resource management evaluates the kinds of data and information that is required by organizations to function and progress effectively.

1.2 History of the Nigeria Petroleum Industry and the Ministry of Petroleum Resources

The Mandate of Ministry of Petroleum Resource Handbook (2004:12) revealed that.the petroleum industry in Nigeria is the largest industry and the main generator of GDP in Nigeria which is also the continent's most populous sector. Since the British discovered oil in the Niger Delta in the late 1950s, the oil industry was marred by military and economic strife largely due to a long history of corrupt military regimes and complicity of multinational corporations, notably Royal Dutch Shell. Despite this, it was not until the early 1990s during the military regime that the situation was given international attention.

Oil was discovered in Nigeria in 1956 at Oloibiri in the Niger Delta after half a century of exploration, the discovery was made by Shell-BP. Nigeria joined the ranks of oil producers in 1958 when its first oil field came on stream producing 5,100 barrel production. After 1960, exploration rights in onshore and offshore areas adjoining the Niger Delta were extended to other foreign companies. In 1965 the Eastern Area field was discovered by Shell in shallow water southeast of Warri. In 1970, the end of the Biafra war, coincided with the rise in the world's oil price, and Nigeria was able to reap instant riches from its oil production.

Nigeria joined the Organization of Petroleum Exporting Countries (OPEC) in 1971and established the Nigeria National Petroleum Corporation (NNPC) in 1977; a state owned and controlled company which is a major player in both the upstream and downstream sectors. Following the discovery of crude oil by Shell D'Arcy Petroleum, pioneer production began in 1958 from the company's oil field in Oloibiri in the Eastern Niger Delta. By the late sixties and early seventies, Nigeria had attained a production level

of over 2 million barrels of crude oil a day. Although production figures dropped in the eighties due to economic slump, 2004 saw a total rejuvenation of oil production to a record level of 2.5 million barrels per day. Currently, development strategies are aimed at increasing production to 4 million barrels per day by the year 2014. Petroleum production and export play a dominant role in Nigeria's economy and account for about 90% of her gross earnings. This dominant role has pushed agriculture, the traditional mainstay of the economy, from the early fifties and sixties, to the background.

In the 1990's to 2008 the Ministry of Petroleum Resources existed as Federal Ministry of Energy (Petroleum & Gas) but in the year 2009, the Federal Government saw the need to create MPR to stand as an organization overseeing the activities of the major parastatals that deal with Petroleum products. That was how the MPR was put in place to stand as a mother ministry for the petroleum sector.

The Mandate of MPR Handbook (2004:3) further revealed the vision of the Ministry of Petroleum Resources (MPR) to be a veritable instrument for effective and efficient exploration and utilization of the Nation's Petroleum for the transformation of her economy. On the other hand, the mission is to formulate and monitor policies, regulations, standards and codes for the orderly, safe, peaceful and lawful development of the nation's petroleum resources so as to secure maximum value for the resources and render best services to the Nation, while maintaining international relations that promote Nigeria's sovereign interest in the Petroleum industry.

The Ministry of Petroleum Resources is a government organization whose operational framework is made up of the Honourable Minister who is a political appointee, and the Permanent Secretary who is a career officer and the Chief Accounting Officer of the Ministry. The Permanent Secretary reports all the affairs of the Ministry to

the Honourable Minister, while the Directors in the Ministry report to the Permanent Secretary. The Ministry has seven Directorates, each headed by a Director, viz:

Department of Human Resources Management,

Department of Planning, Research and Statistics,

Information and Press Unit

Department of Finance and Accounts

Legal Department

Department of Procurement

Department of Gas and Special Duties

Each of the Departments has various divisions and sections in a hierarchical/pyramid setting headed by Deputy Directors, and the Assistant Directors heading sub-sections/units. The Directors report directly to the Permanent Secretary, while the Deputy Directors report to the Directors and the Assistant Directors report to the Deputy Directors respectively. The MPR operational frame work operates in a hierarchical level from the top management cadre down to the middle/junior executive cadre.

The Mandate of MPR Handbook (2004:4) has this as the functions of the Ministry:

1. Initiation and formulation of the board policies and programmes on the development of the Petroleum sector (Oil and Gas) in general;
2. All policies matters on the marketing of crude oil, natural gas, Petroleum products and their derivatives;
3. All concession policies in the oil and gas sub-sectors of the energy sector of the economy;
4. Formulation of policies to stimulate private industry investment and participation in the oil and gas sectors;

5. Administration of government joint venture interests in the Petroleum sector in order to maximize fully economic benefits derivable from Nigeria's oil and gas resources and ensuring optimization of government interest in all oil and gas arrangements;
6. Licensing of all Petroleum and gas operations and activities;
7. Policy matters relating to research and development in Petroleum and Gas sectors of the Petroleum industry;
8. Development of hydro-carbon industries including natural gas, processing, refineries and Petrochemical industries through public private partnership;
9. Formulation of policies to ensure increase of natural oil and gas reserve base and Nigeria's increase technical productivity in accordance with appropriate planning and allocation of production quotas to producing companies in line with OPEC quota and maximization of revenue from oil and gas to the Nation;
10. Coordination and supervision of all bilateral and multilateral relations affecting the energy (Oil and Gas) Sector; Overall supervision and coordination of the activities of the following parastatals and its subsidiaries.

    Nigeria National Petroleum Corporation (NNPC)

    Department of Petroleum Resources (DPR)

    Petroleum Technology Development Fund (PTDF)

    Petroleum Equalization Fund (PEF)

    Petroleum Training Institute (PTI)

    Petroleum Product Prizing Regulatory Agency (PPPRA)

The objectives and targets of government in the Petroleum sector are strategic to the industrial, technological, economic and social development of the country. To achieve this,

various reforms and incentives were introduced since 1999 and they brought significant improvements in the overall management of the country's oil and gas resources. Government had introduced reforms in the oil and gas sectors with the following structure for the industry:

National Petroleum Directorate (NPD)

Petroleum Inspectorate Commission (PIC)

National Oil Company (NOC)

Petroleum Products and Distribution Authority (PPDA)

National Oil and Gas Assets Holding and Management Services Company (NOGAHMSC)

National Petroleum Research Centre (NPRC)

The sector was restructured in line with the reforms while NNPC is being repositioned towards achieving high performance standards in terms of improvements in overall business performance, best practices, financial management, technology systems and human resources as a world-class Oil and Gas company.

Since the establishment of the Ministry of Petroleum Resources it has been working hand in hand with the parastatals above to ensure efficiency, effectiveness and transparency in the Oil and Gas sector of the economy. In line with the numerous responsibilities of the Ministry to coordinate and supervise the activities of the above parastatals and reform structures, provision of relevant information has become a paramount importance. Therefore, accurate information for management staff to carry out their duties effectively is a priority for best results to be achieved. It is in view of this that the researcher saw the need to carry out this study.

The Ministry of Petroleum Resources (MPR) was set up by government to accomplish some stated goals and objectives as mentioned above for the benefit of the

Nigerian populace. According to the Mandate of MPR Handbook(2004:5), the MPR is to compute the gains incurred from the price of petroleum products a special account and invest in social infrastructural projects for the benefit of Nigerian citizenry; to ensure the efficient and diligent utilization of the Fund on hydro-carbon industries including natural gas, processing, refineries and petrochemical industries through public private partnership; to function as an intensive intervention domestic finance organization within Nigeria for coordination and supervision of all bilateral and multilateral relations affecting Oil and Gas sectors.

To achieve its mission, the MPR attempted to restore the confidence of the Nigerian citizenry in public institutions' ability to creditably implement development projects in Oil and Gas sector of the economy. The operational philosophy of the MPR, therefore, is to achieve an efficient, honest and modest accountability in Oil and Gas sector that will have positive impact in uplifting the general condition of living of all Nigerians. The MPR recognized the availability of resources for its operations but believed that the most important resources available were resilience and ingenuity of the Nigerian populace. The MPR, therefore, sought and employed talented professionals and companies of high personal and cooperation integrity whose unique knowledge and attributes would contribute to the fulfillment of its mission.

1.3 Statement of the Problem

The mission and objectives of the MPR couldn't have been realized without prudent management of resources, including information. Information resources are indispensable tool in the development process of modern organizations. People depend on information for economic, social, cultural, scientific and technological progress. The development in science and technology was made possible by information resource products and services.

Indeed, public organizations in Nigeria require information to perform their task and to keep up to date with developments in their fields. Thus, it is essential to understand how a number of public organizations seek for and use information resources or transfer knowledge and information from one to another with a view to communicating or providing better information services to enable them to perform their tasks. In view of this, three problems led to this study as discussed below.

Most large public organizations in Nigeria are faced with the problem of getting the right information that would enable them to carry out their activities. Therefore, a lot of time is used in the search for specific information resources by management staff and information managers who need just quick information for decision making. This is one of the reasons why public sectors in Nigeria are declining. For instance way back in the 1960's and 1970's Nigeria had an efficient railway sector, Nigeria airways, good and reputable educational sector, and health sectors, but today in the 21st century all this sectors have declined due to improper information management, this has posed a lot of problem in the Nation.

It has been observed also that many Information professionals lack information management skills, while the few that possess such skills need to update their knowledge in line with the current trends. This process poses challenges for the need for a quick access to accurate information resources which can facilitate the actualization of the goal and objectives of the organization through the use of information resources in management activities. This will help actualize proper information delivery, thereby ensuring that services are efficiently put in place.

Furthermore, it has been observed that ICT in general has not been fully employed or put to use by most public organizations for instance in the MPR only $^{1}/_{3}$ of the

population are computer literate. It is now important to apply the information and communication technology (ICT) to organizational operations because it improves the ways services are disseminated. In the opinion of Blank *et al* (1999:21,25)the use of electronic information resources has improved their work considerably in several ways. Currently, there are new ICT that facilitate information resource management in their organizations, it has not only change the mode of transactions in the organizations but hope has come to management staff who are eager to get the proper information at the right time for quick decision making. Services are delivered to appropriate areas of need and work is done accurately and timely, thereby increasing productivity and realizing the goals and objectives of the organization. If IRM Is properly achieved by all public organizations in Nigeria, it means reviving the nations economic sectors, health sectors, educational sectors, transportation sectors, political sector and thereby moving Nigeria forward.

Information resource management in organizations involves the use of manual and computer systems and the practice generally enhances proper handling of information, which in turn enhances achievement of organizations' goals and greater productivity. The invention of computers and other new information technologies have greatly enhanced the capabilities of processing information resources. Most of these information handling devices are used to manage and manipulate resources in public organizations like MPR to achieve efficiency. But as observed, lack of proper handling of information resources and adherence to the tenets of information resource management are capable of depriving public organizations, including the MPR of their desired benefits in the management process and service delivery. Therefore, this study is very relevant to the Ministry of Petroleum Resources, being a mother ministry to the oil and gas sector of the economy

which presently is the major source of the Nations Gross Domestic Product (GDP), and if the oil and gas is not properly managed, automatically Nigeria's source of income will crumble which may lead to serious increase in poverty level.

It is against this background that this study was conducted to; determine how information resources were managed in the Ministry of Petroleum Resources (MPR), to find out what information resources and technologies were available, and to find out how it was used to enhance productivity in the organization.

1.4 Research Questions

The study was conducted to answer the following research questions;

i. What type of library/information centre is available in the Ministry of Petroleum Resources (MPR)?

ii. What type of information resources are generated in the MPR?

iii. What are the methods used to generate information resources in the MPR?

iv. What type of facilities/equipments are available for information resource processing in the MPR? (input/processing, storage, retrieval, and dissemination).

v. What type of ICT facilities are available in the MPR?

vi. What are the effects of ICT on information resource management in the MPR?

vii. How does the use of ICT for information resource management enhance staff activities and productivity in the MPR?

viii. Who are the personnel/officers involved in information resources management in the MPR? (categories, qualifications, adequacy, training and development programmes).

ix. What are the facilities used for the protection, security and preservation of information resources in the MPR?

x. What factors militated against effective information resource management in the MPR?

xi. What are the factors suggested to improve information resource management in the MPR?

1.5 Objectives of the Study

The general objectives of the study are to investigate the management of information resources in the MPR, and the specific objectives are to:

i. Investigate the type of library/information centre in the Ministry of Petroleum Resources.

ii. Investigate the type of information resources generated in the MPR.

iii. Identify the methods used to generate information resources in the MPR.

iv. Identify the facilities/equipment available for information resource processing in the MPR.

v. To find out what type of ICT facilities are available in the MPR.

vi. To find out the effects of ICT on information resources management in the MPR.

vii. To find out how the use of ICT for information resource management enhance staff activities and productivity in the MPR.

viii. To identify the Personnel/Officers involved in information resource management in the MPR.

ix. To identify the facilities used for the protection, security and preservation of information resources in the MPR.

x. To find out the factors that militate against effective information resource management in the MPR.

xi. To find out the factors suggested to improve information resource management in the MPR.

1.6 Significance of the Study

This study is significant in a number of ways; first by investigating the type of library/information centre in the MPR, the researcher aimed to find out if the MPR does not have a Standard Library and an Organized Information Centre, and because there is a need to meet up with the world best practices, and since a Standard Library with a well organized Information Center plays a major role in the management of information resources, the study had highlight the need of the MPR and other public organizations to put an organized Library/information centre in place so that IRM can be properly organized and achieved in government ministry's and public organizations in general.

The study also aimed at investigating the type of information resources generated in the MPR. This had ascertained how the information resources are handled and managed in order to suggest measures for proper management.

Furthermore by finding out the methods used to generate information resources in the MPR, the study had expose how other public organizations who had challenges with problems of generating information resource can adopt the MPR method in order to ease time spent in getting the right information.

By identifying the facilities/equipments available for information resource processing in the MPR, the study brought into focus the need for public organizations to subscribe and employ the best facilities/equipments for information resource processing.

The study also aimed to find out the type of ICT facilities available in the MPR, this is to help public organizations' assess the efficiency of the ICT facilities in their organization, and to improve on them.

The study also aimed to find out the effects of ICT on information resource management in the MPR. This had revealed the efficiency of ICT on information resource management (IRM) in the MPR and can be adopted by other public organizations.

The study also aimed to find out how the use of ICT for information resource management (IRM) enhance staff activities and productivity in the MPR. This study had discovered how ICT generally helps jobs to be done effectively and efficiently within a time frame in public organizations, thereby exposes the need for all other public organizations to implore ICT in their operations for better IRM.

Another objective of the study was to find out who the Personnel/Officers involved in IRM in the MPR are. This would helped the MPR and other public organization to identify the appropriate personnel who are responsible for IRM in order to ascertain their efficiency on their job title and to also bring into focus the need for training programmes on IRM for this categories of staff.

Further objective of this study was to identify the facilities used for the protection, security and preservation of information resources in the MPR. This was to reveal to public organizations measure that they can adopt to secure firmly and confidential their information resources, especially against natural disasters and also against exposing their security strategies from competitors who are eager to get the latest information to bit down other organizations who may be dealing with similar or the same products. This study also helps to secure information resources for future generation.

The study also aimed at finding out the factors that militated against effective information resource management in the MPR, and lastly to find out factors suggested to improve information resource management in the MPR. The study is significant because after identifying the factors that militated against effective IRM, suggested factors to

improve IRM was also provided, which had highlighted measures to improve ideal information resource management practices in public organizations, this means creating awareness on how to operate IRM to organizational activities and operations, thereby bringing about greater productivity in all sectors of the economy, and moving our country forward.

1.7 Scope and Limitations

The scope of this research is to find out how information resources are managed in the Ministry of Petroleum Resources, Abuja. The study covered the types of library/information center in MPR; types of information resources generated in the MPR; how information resources are processed in the MPR in terms of information inputting/processing, storage, retrieval, and dissemination; personnel/officers involved in management of information resources in MPR; the effects of ICT on information resource management; how the application of ICT on information resource management enhanced staff activities and productivity; the strategies used for the protection, security and preservation of information resource in the MPR; and factors that militated against effective information resource management in the MPR, lastly suggested factors to improve IRM in the MPR.

The researchstudy was limited to information resource management in the MPR, Abuja with less emphasis on other MPR parastatals like DPR, PTDF, PTI, NNPC, PPPRA and PEF.

Some constraints were encountered by the researcher in the course of this study such as financial constraints and the period taken to carry out this study. The challenges the researcher encountered in the administration of the questionnaire was numerous, first the attitudinal response of the subject of the study, because the researcher is their

colleague, and so they were reluctant in completing the questionnaire, at last the researcher had to accompany the completion of the questionnaire with follow-ups and pleading with the respondents, secondly, some alterations made on the topic of the study required the researcher to go back to the field to issue questionnaires again for the second time. This was responsible for the delay and long period of time taken, the collection of the questionnaires took the period of three months all together, and the period of the study collectively was April 2008 to December, 2014.

OPERATIONAL DEFINITIONS OF TERMS

These are the meanings of the terms in the context of this thesis.

Application of Computer Technology: Managing a process more rapidly, accurately and less expensively. For example, sorting, filing, storing and dissemination.

Communication Channel: In this study, this refers to a route by which outcomes such as speed with which communication can take place and over what distance.

Data: Collection of facts from which conclusions may be drawn. It is a set of unrelated information and is of no use until it is properly evaluated, that is, when value is added or when converted into information by contextualization, categorizing, calculating, correcting and condensing.

Downstream: Is a factor commonly refers to the refining of petroleum crude oil and the processing and purifying the raw natural gas, as well as the marketing and distribution of products derived from crude and natural gas. The downstream factor touches consumers through products such as gasoline or petrol, kerosene, jet fuel, diesel oil, heating oils, lubricants, waxes, asphalt, natural gas, and liquefied petroleum gas (LGP) as well as hundreds of petrochemicals.

Information: In this study, is related to the concept of knowledge, instruction, communication, representation, and mental stimulus. Simply stated, information is a message received and understood, usually in a form of a document or an audible or visible communication which has a sender and receiver.

Information and Communication Technologies (ICT): Refers to diverse set of technology tools and resources used for processing, storing, retrieval, dissemination, storing and management of information.

Information Creation: In this study refers to how information is generated to be put into useful use.

Information Dissemination: In this study refers to the process by which an organization shares information among its unit's members.

Information Management: Organizing information in a right direction for the end users.

Information Resource Management: Information resources as assets that should be managed rigorously and can contribute to the success of business in organizations.

Information Resources: Materials such as Journals/periodicals, textbooks (print base/electronic base) magazines, flash drives, CD Rom/Disc, Microfilms, Macrofilms, Microfiche etc. In order words, Information resources are channel or avenues through which knowledge, ideas, opinions or feelings are recorded.

Information Processing: Refers to the method of scrutinizing and filling information into a computer system.

Information Retrieval: Refers to the process of accessing or taking out information for usage.

Library: In the context of this study refers to a social institution where collection of books, tapes, newspapers etc are kept for people to read, study or borrow. It is also said to be a store house for knowledge.

Management: In this context refers to an art of controlling, planning, directing and motivating the business of an organization.

Midstream operations: In the context of this study, often included in the downstream category and considered to be a part of the downstream sector in Oil and Gas Production.

Ministry of Petroleum Resources: Is a government organization established to formulate and monitor policies, regulations, standards and codes for the orderly, safe, peaceful and

lawful development of activities of parastatals that deal with petroleum products like NNPC, PPPRA, PEF, PTI, DPR, PTDF, and their subsidiaries like National Petroleum Directorate (NPD), Petroleum Inspectorate Commission (PIC), National Oil Company (NOC), Petroleum Products and Distribution Authority (PPDA), National Oil and Gas Assets Holding and Management Services Company (NOGAHMSC), National Petroleum Research Centre (NPRC). The MPR is a mother Ministry which is responsible for a veritable instrument for effective and efficient exploration and utilization of the nation's petroleum resources for the transformation of the economy.

Public Organizations: Refers to Ministries, Extra-Ministerial Departments, Parastatals, etc at Federal, State and Local Government levels that deal with products, goods and services with an aim to achieve productivity.

Upstream: Refers to the exploration and exploitation of crude Oil. It is normally done on On-shore or Off-shore. On-shore is the exploration on land wells and acreages, while Off-shore is the exploration on the sea/ocean beds.

Stakeholders: In this study, stakeholders represents the MPR parastatals like NNPC, DPR, PTI, PEF, PPPRA, etc plus other oil companies that relate directly with the MPR.

Staff of Junior Executive Cadre: This are junior staff of the MPR from Grade level 06-07.

Middle Administrative/Executive Cadre: In the study they are referred to MPR staff from Grade Level 08-14.

Top Management Staff: This are the most senior officers (Directorate Cadre) of the Ministry Grade Levels 15, (Assistant Directors), 16(Deputy Directors) and 17(Substantial Directors). This group of Directorate Cadre are the managers in the Ministry who need prompt and quick relevant information for decision making.

REFERENCES

Ajewole, Bayo (2001) Record and Information Resource Management in Public Service A theoretical and Practical Framework, Badagry: The Administrative Staff College of Nigeria P. 21.

Allen, Lee (2005) Mis Quarterly 25 (1). Retrieved December 16th 2009 from HEEP://en.wikipedia.Org/wiki/management –Information System. P.8

Atkociunine, Z. (2009). Information Resource Management: UK, Manager of Data, Information and Knowledge p. 28.

Burch. J.G. and Grudmitski, G. (1989). Information System: Theory and Practice. 5th ed. New York: Willey. P. 18.

Burk, C.F. and Horton, F.M. (1988). Infomap: A Complete Guide to Discovering Corporate Information Resources: New Jersey, Englewood Cliffs, Prentice Hall p. 24.

Eliss, D. (1986). Information Management and Information Work; International Journal of Information Management: New York, Vol. 6, P. 2.

Frishamma, Johnan (2002). "Characteristics in Information Processing Approaches." International Journal of Information Management. P. 22

Hoven, J. Van Den (2001). Information Resource Management: UK Foundation for Knowledge Management. Information Systems Management, vol. 18, No. 2, P. 80.

Ibrahim M. (1999:45). Comprehensive Information of Local Government Areas Secretariats in Kaduna State, Zaria: Information Office, P. 9.

Kerr, J.M. (1991). The IRM Imperative; New York, John Wiley and Sons. P. 15.

Mcleod, R. and Brittain-White, K. (1960). Incorporation of IRM concepts in Undergraduate Business Curricular: New York, Information Resource Management Journal. Vol. 1, No. 1, P. 28.

Morgan, D.W. and Robert V.K. (1960). Small-Sample Techniques. The NEA Research Bulletin, Educational and Psychological Measurement Vol. 38, P. 99.

Norman, N. (2009) Statistical Package for the Social Sciences (SPSS) 17th Edition. P. 20

O'Brien, J. (1990). Management Information Systems. A Managerial End User Perspectives. Homewood. Illinois: UK, Richard D. Irwin Inc. P. 22.

Schoneyman, A. (1995). Organizing Information Resources. Information Management Review: UK, Vol. 1, No. 45, P. 35.

The Mandate: Ministry of Petroleum Resource Handbook (2004). Government Publication, Government Press: Abuja, Nigeria. P.1-5.

Uwaifo, S. O (2004). Management Use of Records in Delta State University, Nigeria, http/www.//emaraldinsight.com/insight. P. 3.

Willard, N. (1993). Information Resource Management: Topics, Concepts and Resources for Teaching IRM to Business Studies http:/gise.org/jise/vol.1-5/informi.htm. p.18.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

2.1 Introduction

The purpose of this chapter is to review the literature related to the subject of information resource management in order to establish a foundation for the study at hand. The importance of information resource management is critical in public organizations, especially if it is harnessed to provide accurate and timely information for effective management of an organization. This chapter reviewed studies on the theoretical, conceptual and practical application of information resource management in public organizations, especially in Nigeria. The chapter is presented under the follow sub-headings:

2.2 The concept of Information Resources and Information Resource Management in Organizations

2.3 Data and Information Resource Creation and Generation in Public Organizations

2.4 Types of Information Resources Generated in Organizations

2.5 Electronic Information Resources in Organizations

2.6 Information Resource Acquisition, Processing, and Dissemination in Public Organizations

2.7 Information Resource Organization, Storage and Retrieval Methods in Organizations

2.8 Methods and Mechanisms of Processing Information Resources in Public Organizations

2.9 Information Management in Public Organizations

2.10 Protection, Security and Preservation of Information Resources in Public Organizations.

2.11 How Information Resources are used by Managers

2.12 Personnel/Officers involved in IRM in Public Organizations

2.13 Effects of Information and Communication Technology on Information Resource Management in Organizations

2.14 Factors Influencing Information Resource Management in Public Organizations

2.2 The Concept of Information Resources and Information Resource Management in Organizations

James (2005:7) defines information resource as channels through which ideas, opinions or feelings are stored and preserved. Leslie (2001:67) simply puts it that information resources refer to the items of information in all format, print or electronic or audio visual materials etc. It is related to this study because it discusses the concept of information resources in its actual sense. Similarly, Edward & Finlan (2004:12) define information resource as materials in any format whether or open access or held on resources, which have been developed either as a general or special resources in terms of coverage.

Wali (1999:8) conducts a survey research on information resources. He observed that large number of people, organizations and agencies are today involved in generating lots of information. As a result, information resources are being produced in a variety of formats such as:

1. Print: books, textbook, magazines etc
2. Non-print: picture, map, chart, illustrations.
3. Electronic: CD-ROM, database, internet resources etc

Similarly, in a book written by Frishammer (2002:148) He identified other sources of information for organizations regardless of format as: letters, memos, reports, manuals, financial statement, plans, maps computer files as well as audio visual. Other corporate resources which include: equipments, facilities and databases.

It is indeed satisfying to note that all the above definitions view information resources not just as a single format but in different formats. Their works are related to the present study because information resources are categorized into print, non-print, and electronics which this study is meant to study; these include books, conference proceedings, government/corporate reports, newspapers, journals, pamphlets, hand bills, minutes, posters, pictures, films etc. The information need of an organization determines the kind of information resources that are produced, useful and relevant to maintain standard decision making for planning and controlling the organization within the environment. Information resources need to be effectively utilized to achieve the overall goals and missions of the organization. This is because information resources are monitory inventory documents that create, process, store and disseminate information to end users.

Information resources are information irrespective of the form or medium create, receive or maintained by an individual, agency, establishment, institution or organization in pursuance of its legal obligations or in carrying out business operations.

Cook (1980:18) stated that information resources in the 21st century are all stored as computer file of some kind. They have location called the Uniform Resources Location (URL) in the internet site but may be dedicated at other (mirror) site each file has a file name according to the convertion of the computer where it is located and pathname which defines the directory and sub-directories in which it is stored starting from a root initial director at its own sites. Unuaigbe (1990:26,33) defined information resources as records or those materials made or received by institutions in pursuance of legal obligation or in conduct of functions and preserved as evidence. Schellenberg (1985:11) refers to information resources as the memory of any public or private institution which are Adjudged worthy of permanent preservation for reference and research purpose.

Akinfemiwa (1997:1,16) stated that information resources are defined according to the type of information needed by and organization which help in the execution of the organizational objectives of performance and recording of initial facts. To another end, Evborokhai (1991:13) asserted that information resources can be conceptualized as those official documents of an organization which furnish information on organizations' function, policies, procedures, operations and other related activities. Russel (1974:16) far back maintains that information resources are all documentary materials live correspondences, forms, reports, drawing maps, photographs of any characters and in various physical forms which could be preserved for short or long period. These documents could be materials created or received in pursuance of legal obligations or in connection with business transactions. This was further supported by Evborokhai (1991) who stated that information resources is a record that satisfy the users in terms of learning, teaching and research, which are books, journals, encyclopedia, dictionaries, films, maps, atlas, cassettes etc in the modern age the importance of computer in providing information is in the areas of library collection, science, technology, arts, social science, humanistic and general area. Cooks (1990:21) further expressed that information resources can be seen as materials consulted to obtain information, like textbooks, journals, government proceedings, magazines, computer files, CD Rom, microfilm, microfilm and microfiche etc.

Information Resources Management is one of the concepts that have been changing the pace of development particularly in the area of Library and Information Science. While the notion of Information Resources Management has existed for more than three decades, recent developments in the field of information processing have made the concept and the philosophy underlying it, not only viable but imperative. IRMA (2010)

suggests that information should be recognized as significant organizational resources in much the same way as people, machines and capital, consequently, it deserves serious management attention.

Information Resource Management (IRM) is one of the concepts that have been changing in the pace of development particularly in the area of Library and Information Science. While the notion of Information Resource Management has existed for more than three decades, recent development in the field of information processing have made the concept and philosophy underlying it not only viable but imperative.

Afolabi (1991:10) sees information resource management as the systematic control, organization access to and protection of organization information whether it be on tape, disc, paper or film (macrofilm, microfilm, microfitche). Akusah (1996:101-106) viewed information resource management as the scientific and systematic control of recorded information, the control of which is over its creation, maintenance, utilization, storage, retrieval and dissemination, substantial improvement in administrative order and discipline is only achievable through greater efficiency and economy which can be achieved through conscious and consistent information resource management.

According to John (1991:21) information resource management refers to the area of general administration management concerned with achieving economy and efficiency in the maintenance and use of information resources as part of the information system of an organization so as to achieve specific objectives. Ayeni (1990:16) asserted that information resource management as a segment of the larger field of administration management and use of all information sources (correspondences, forms, reports directives, photographic documents and machine readable records) promotion of maintenance and security of information resources. Burke and Horton (1998:23) on the other end refers to

information resource management as the system of controlling and caring of recorded information in a systematized manner used by an organization in its operation. It also refers to the control or direction of all information resources through systematic means to achieve effectiveness, economy and efficiency. It could also be a process where information sources are planned and controlled.

Bello (1983:15) provided a very comprehensive definition of information resources. He defined it as all paper registers, printed materials, books, plan, maps, photographs, microfilm, sound recordings or other documentary materials regardless of its physical form or characteristics made or received by public or private bodies or individuals in pursuance of their legal obligation or in connection with the transaction of their business.

On a general note, information resources are any discrete item that store information irrespective of its physical form, that is an accumulated trend of events. Information resources are essentially an element of data relevant and usually conveying a meaning in management and administrative process.

Joan Fraser et al (2009:17) in IRM plan revealed that the vision of IRM is for the consumer, workers and businesses to be well served by benefiting directly from improved access to information and from the department's ability to use information and technology efficiently and effectively to perform its functions. In their view, the goal of the IRM plan was to

1. Enable department staff to provide citizens with easy and efficient access to information, services and online interaction with department programs.
    * Implement new Internet technologies
    * Provide more information via the Internet
    * Increase electronic data interchange (EDI)

* Increase Internet transactions-doing business over the Internet
* Increase use of alternative presentation formats

2. Provide the right applications, technologies, and integrated information needed to effectively support organizational mission, functions and policy formation in a cost-effective manner.
   * Improve portfolio management
   * Increase project success
   * Support business initiatives
   * Improve the quality and use of information for policy analysis
3. Provide employees with secure and reliable access to applications and information any time and anywhere in a cost-effective manner.
   * Implement total cost of ownership concepts
   * Improve infrastructure security
   * Ensure a sustainable infrastructure
   * Improve accessibility (remote access)
4. Develop a professional IRM work force within the organization that is proficient in the management of data, the application of information and the use of technology.
   * Plan for staff succession
   * Implement a data stewardship program
   * Assist decision-makers
   * Optimize IMD staff effectiveness

Dauda (1994:20-25) in tracing the origin of information resource management, explained that "the seeds of Information Resources Management were planted in three disciplines "database management, record management and data processing management".

The activities of each discipline were generally independent of one another. This explains the wide variation in meaning of the term.

The database management perspective is concerned with establishing and enforcing standards to support a global view and integrated use of enterprise data. The management scope was almost exclusively technical. Typical functions were those necessary to coordinate database management system activities and application programs.

The Record Management approach to Information Resource Management has its origin in library science, record management, and other disciplines concerned with the effective storage, retrieval and utilization of documents in organizations. The data processing management views arose from the fields of business administration and Management Information System (MIS). It is concerned with providing better support for corporate decision making. Here, considerable attention has been given to the notion of information as a corporate asset in as much as the same way of physical assets lie personnel and equipment.

Shoneyman (1995) described the components of information Resources Management as selection, acquisition, organization, dissemination, retrieval, preservation and disposition. These components will be dealt with individually in this review.

Even though information and data are often used interchangeably, they are actually different. In an attempt to clear the confusion between the meaning of data and information, some scholars on the subject explain how these terms relate or differ. For example, Probst and Williams (2008:19) described the characteristic of data where they stated that "data is capable of interpretation within a particular context," thus providing the receiver with information. When data is networked and used, that is when it becomes information. They further acknowledged that data could only transform into information

when it featured as "wisdom, intelligence or ability to reflect." Similarly, Davenport and Prusak (1998:9) on the other hand viewed data as the set of discrete, objective facts or events. They maintained that in organizational context, data could be described only as part of what happened, and provides no judgment or interpretation or basis of action, data says nothing about its own importance or relevance. However they caution that data is important for organizations because it is an essential raw material for the creation of information. Data becomes information when it is given meaning, that is, when value is added or when converted into information by contextualizing, categorizing, calculating, correcting and condensing. They further maintained that "information is a massage usually in the form of a document or an audible or visible communication, which has a sender and a receiver." It is data endowed with relevance and purpose.

Furthermore, Bhatt in Helve (2001:18) noted that the relationship between data and information is seen to be "dependent on the degree of the interpretation. Illustrating the relationship, he cited an example of patient's visit to a doctor's office. The doctor he says elicits a lot of "information" from the patient. Some of the information becomes relevant as the doctor considers it important for the medical diagnosis of the patient. Some of the information given by the patient however is relevant for the doctor and becomes "data". The doctor assimilates the acquired information in his/her "information base" and after finding a useful pattern in the information, prescribes medication to the patient.

Data is a set of unrelated information, and as such is of no use until it is properly processed. Upon processing, once the data becomes relevant then is converted into information. Organizations generate data from transactions and these are maintained as records. Information has many meanings and usually the meaning of information depends on the context in which it is used. In the literature of information resource management

the concept of information is used to refer to knowledge, instruction, communication, representation and mental stimulus. Simply stated information is a message received and understood. In terms of data, it can be referred as a collection of facts about the activities of an organization from which conclusion can be based. Others refer to it as knowledge acquired through study or experience or instruction. But in the context of this study, information is seen as the activities involving processing, manipulating and organizing data in a way that it adds to the knowledge of the person receiving it. Organizations are information processing units as they generate and consume information in their daily activities.

Cronin (1985:38) posited that the concept of information, in everyday English refers to knowledge communicated, which plays a central role in contemporary society. The development and widespread use of computer networks since the end of World War 2 and the emergence of information science as a discipline in the 1950s are evidence of this focus. Although knowledge and its communication are basic phenomena of every human society, it is the rise of information technology and its impact that characterize some society. Information societies consider information as a basic condition for economic development together with capital, labour and raw materials.

Sharon and Williams (1995:18) developed a mathematical theory of communication where they referred to the common use of information with its semantic and pragmatic dimensions, while at the same time defined the concept to suit engineering framework. The fact that knowledge of communications has been designated with the word information linguistic coincidence. They defined information as the state of system of interest; a quality message from a sender to one or more receivers. Information is always about something-size of a parameter, occurrence of an event, value, ethics, etc. Viewed in

this manner, information does not have to be accurate; it may be a truth or lie, or just the sound of a falling tree. Even a disruptive noise used to inhibit the flow of communication and create misunderstanding would in this view be a form of information. Generally speaking, if the amount of information in the received message increases, the message is more accurate. This model assumes there are a sender and at least one receiver. Many refinements of the model assume the existence of a common message understood by the sender and at least one of the receivers. An important variation identifies information at that which would be communicated by a messenger if it were sent from a sender to a receiver capable of understanding the message, or even cognizant that there is a message, making information something that can be extracted from an environment e.g. through observation, reading or measurement.

Organizations generate data from transaction and these are maintained as records. Records are a specialized form of information. Essentially, records are information produced consciously as by-products of business or business activities or transactions and retained because of their value. It is evidence of the activities of the organization but they may also be retained for their informational value. Sound records management ensures that the integrity of the record is preserved for as long as they are required. The International Standard Organization on Records Management-ISO (1948:9) defined records as "information created, received and maintained as evidence and information by an organization or person, in pursuance of legal obligations or in the transaction of business."

Records may be retained in an organization because of their business value, as part of corporate memory of the organization or to meet legal, fiscal or accountability requirements imposed on the organization. Wilson (1982:45) expressed the view that

sound management of business records and information delivered "include the six key requirements for good corporate governance as transparency, accountability, due process, compliance, meeting, statutory and common law requirements and security of personal and corporate information." Davies (2000:32) explained the multi-faceted concept of information in terms of the sign and sign-system. Sign themselves can be considered in terms of four Internet-dependent levels or layers or branches of semiotics, pragmatics, semantics, syntactic and empirics. These four layers serve to connect to the social world on the one hand and with physical or technical world on the other.

Takeuchi and Nonaka (1995:23) in explaining the term "information" considered its interpretation and concluded that "information" provides a new point of view for interpreting events or object, which make visible previously invisible meaning or sheds light on unexpected connection. Likewise, the role of information as a necessary medium or material for eliciting and constructing information is emphasized. Takeuchi and Nonaka further identified two forms by which information can be perceived; this is "quantitative form that focuses on the volume aspect, and qualitative form which they referred to as the semantic form, one that gives meaning, measures in formativeness and usefulness of the information." Information is meaningful and valuable only when the receiver derives the same meaning and intent as the provider of the information. For instance, a message can mean different things to different people, thus the provider of information must be wary of how information is presented. From the foregoing, information must possess some attributes to make it meaningful and useful. Generally, information is meaningful and useful if it is accurate, timely, relevant and complete. Senn (1982:21), attributes of information differ between an item and set of information. He asserted that accuracy, form, frequency, breadth, origin and time horizon, relevance, completeness and timeliness

are attributes of information. Senn's breakdown of attributes is elaborate, but what is important for this study from Senn's view are the following attributes of information.

(a) **Timeliness**: To be useful, information must be available when it is needed. Delay in gathering, processing or disseminating can transform potentially vital information into a worthless data. Out-dated information is of no value. Timeliness of information does not necessarily mean to be available all times but at the time required in order to have the required impact.

(b) **Accuracy**: Information must provide a valid reliable reflection to reality. It must be devoid of ambiguity. It is not a case of truth or falsify but to give the information as accurately as possible. Though improving the level of accuracy may incure the increase in cost, information providers have tried to do this through an investigative journalism, self examination and objectivity in their report.

(c) **Relevance**: Information is relevant if it is important to a particular situation, for example, information that was relevant to a particular period may not be relevant at another period if it is not needed and was not used then.

(d) **Completeness:** Information must contain all necessary details to be useful. If it is incomplete, the recipient may get inaccurate or distorted information. Completeness removes uncertainty.

Information resource processing attributes tends to flow in the required direction and to the audience targeted. Within the development context, information resource management is not only a means to facilitate appropriate decision-making but also a requirement for achieving a greater productivity. Similarly, every society or nation requires information resource management to bring together either culturally or socially, all discrete groups into single political entity and for establishment of a common nation

identity, which overshadows or eliminates parochial or ethnic loyalty. Access to information resources by various segments of the nation assists in the establishment of national central authority over subordinate units or regions, which may or may not coincide with the distinct or social groups. Information resources helps in the linking of a government with the governed such as to reduce opportunity for misunderstanding, frustration and disruptive conflicts as a result of marked differences in aspiration and values. Because of the primacy of generating the right attitude and value systems, providing much of the needed information and knowledge and guaranteeing the security in the nation, therefore it is necessary to examine how best information resource management is structured, in public organizations to produce efficient service details.

2.3 Data and Information Resource Creation and Generation in Public Organizations

To generate Information Resources, Welchi (2006:27) reiterated that generation of information resources may be performed by an acquisition department, acquiring materials by all appropriate means, by an ordering department, dealing only with those titles which are purchased, partially by specialized departments within the library e.g. a serials department or a self-contain subject division, as an added duty by an office primarily concerned with other functions e.g. library administrative office, or by a centralized processing organization, which serves as a number of libraries and may also catalog the materials.

According to Goldhor (2003:32), the basic tools of acquisitions are the records of the library's holdings and a wide range of bibliographies. The basic elements according to Goldhor in the information resources generation purchase procedure, after a title has been selected for purchase are: (1) searching the library records to determine that it is not

already available (2) checking the correctness of the bibliographic description, including the standardized entry (3) Ordering it and recording the order for temporary internal control (4) receiving it, updating the order records and approving the invoice for payment (5) forwarding it to the catalog department and (6) after the title has been catalogued, clearing the order record from the active files.

Drury (2000:21) stressed that like records, which are their tangible forms, information resources generation procedures are structured to efficiency in terms of both speed and economy. Care is taken to set up procedures which conform to the regulations of the governing authority over the library, whether this be a municipal, state or federal government unit, an academic institution, a school, a private firm, or other organizations. According to him, the less restrictive the regulations are, the freer the acquisition personnel are to develop the most effective procedures. Degrees of autonomy vary from the independent library which selects its agents, sends out its own orders, and handles its own funds, to the small school library which allowed to submit lists of titles wanted to a central purchasing agency once or twice a year. In general, the larger the library, the freer it is to manage its own purchasing. As a library becomes larger and its buying programme expands, the special problems of obtaining the less usual library materials such as out-of-print, antiquarian, and nontrade publications become more difficult, and central purchasing agencies usually recognize the value of the library specialist in the operation.

Jackson (2001:20) stated that bibliographic control records in the acquisition operation provide a record of titles on order, titles received but yet catalogued, and titles received without order, that is, by gift, exchange, or automatic acquisition arrangement. Efficiency suggests that there records be in one file arranged alphabetically by main entry, since all of these classes of materials must be consulted in checking new orders against the

library's holdings, and their presence in one file makes only one consultation necessary. Supporting these records and the acquisition procedures are such auxiliary files as purchase orders filed by number, date or order, or source, financial records relating to payment and fund control; consideration file of title wanted but no longer available, from the publisher and not yet located in the out of print market; separate order records for special forms of materials, such as music, recordings, photo-reproductions, maps and materials in non-Roman alphabet languages; continuation order and receipt records, periodicals order and checking files; address files for agents most commonly used; control files for supplies and forms; accession records; correspondence files; and a file of completed orders, which some libraries are required to keep for a specified number of years. The planning of these records allows for claiming overdue orders, recording agent's reports notifying the person who requested that a title be ordered, and the production of accession lists of information resources newly received.

Tauber (2004:15) wrote that basic acquisition forms have consisted of a request card, which was used for searching the title and successively for the order, receipt, and completed-order files, and a sheet order typed from the completed request card. In recent years, according to him, many libraries have been using multiple-order forms. The multiple-order form consists of a number of slip of papers arranged together with provision of duplication of text from a single typing. Most such forms include an order slip for the dealer, an outstanding order record, and a fund record.

Welchi (2006:19) stressed that the present trend is toward computerization of acquisition records. The large amount of a book keeping done in many acquisition departments makes this a natural focus for early attention in automating library procedures. Inspite of a few successful partial application, it must be admitted that the

automation of acquisition is still in early stage. Most automated acquisition procedures presently in operation are off-line and not part of a total automated library system. the acquisition operation of the future appears to be on-line operation fully integrated with an automated library system.

According to Wulfekoetter (2001:27) information resources acquisition, whether scaled down for the small library or up for the large research library, include certain basic elements, coordination of the selection of materials; administration of funds for buying them; gathering of operational statistics; mashing of acquisition procedures with related procedures of other units of the library; and attention to productive relations with the book trade, donors and other sources of materials for the collection of the information resources.

The collection development or acquisition department of library's responsibility for determining what is to be generated or added to the library collections varies. It may be minor, with its functions being to secure titles selected by others, having first ascertained that the title recommended are not already present in the collection, it may include the coordination of selection, with the duty of selecting in those subject areas not covered by other library personnel and patrons; or it may have full responsibility for gathering the library's collections, its staff including skilled subject bibliographers for this purpose.

Selection is of basic importance to a library, both for present services and future potentials, wise collection is based upon pertinent background data which has been gathered and coordinated. Each title selection should be made full awareness of the library's immediate and long range objectives, its clientale, the present strengths and weaknesses of its collections, its commitments for automatic receipt of materials, its potential sources of government and donor aid, the size of its funds, cooperative agreements with other libraries and library resources in the immediate geographical areas.

When this information is known, an acquisition policy statement may be drawn up to serve as an established guide. If selection is made outside the acquisition department, the department provides the information to the selectors, along with publishers and vendor catalogue and brochure offering materials for purchase.

According to Drury (2000:21) there are fundamental differences in the selection programs of libraries of different size and type. Public libraries which do not attempt to build research collections, are more concerned with current rather than retrospective publications and place selection responsibility mainly with the public service personnel. School and college libraries must be highly selective, and useful lists have been published for their guidance. There is a trend among large University libraries to turn away from reliance on faculty recommendations for selection and move toward the library bibliographer to shape balanced collections. The special library purchase in depth within its special areas of interest, relying heavily on the library staff to select publications and to make them fully available to the limited clientele.

In generating information resources in the library, the acquisition or collection development department that acquire the materials for the library must ascertain that the material is not yet in the library by checking through the library holdings before ordering to avoid duplication. While selection of the title and type of what must be acquire must be done with wisdom to represent the interest of the library's clientele.

It has been suggested that knowledge could be tapped by conversion of data into meaningful form and that such a process would create knowledge. Sverlinger (2000:27) termed the process as a "socialization process" and it constitutes four components:

i. A socialization component where knowledge is transferred when it is a social contact as through apprenticeship, or experience sharing;

ii. An externalization component as when the experience is documented and made explicit thus the chances of converting to explicit knowledge exists;

iii. A combination as when records and experiences are updated, reviewed and evaluated, hence knowledge conversion is transferred mainly from explicit to implicit;

iv. An internalization component where existing explicit and implicit knowledge enhances the knowledge within an individual hence is converted into knowledge;

Public organizations are supposed to be not only information and knowledge processing units that solve existing problems and adapt to changing environments but they also need to re-define their problems and solutions and react to the environment to create knowledge. Takeuchi and Nonaka (1995:23) maintained that creating knowledge is a matter of learning or acquiring knowledge from the outside. Knowledge is built from the interactions among members of the organization. They maintained that the theory of knowledge creation postulates that the process has two interrelated dimensions ontological and epistelogical. The former refers to the fact that organizations cannot by itself be created but rather this has to occur through individuals. Argyris (1999:17) also mentioned that information created within an organization moves spirally through the levels of the organization whereby the information created by individuals is amplified and crystallized as a part of information network of the organization. In this process the inter-organizational levels and boundaries are considered.

Davenport and Prusak (1998:9) took information generation to be similar to information creation. They identified a mode of information generation constituting of five features: acquisition, dedication of resources, fusion, adaptation and information networking. This concentrated on what the organization can do to information without

explaining the underlying mechanism. Similarly, Egbu and Jesse (2003:19) in another study established that information creation in organizations has brought about the need to address and solve the problems to manage change and innovation. The idea that information is created through a socialization process where information conversion occurs between the two forms of information, tacit and explicit information follows that understanding of the underlying mechanism of the conversion process is crucial. Socialization in organization is facilitated in various areas and scenarios. This includes situations such as in apprentices, where individuals acquire information through observation; initiation and practices; on the job training; working side by side as in the peer assisted method of those in Dixon in Finnegan and Salaman (1999:31) of the British Petroleum where informal meetings are held to discuss and solve difficult problems. This is when tacit information is converted to explicit information through metaphors, analogues, concepts, hypotheses, models, dialogues, collective reflection and articulation through codification or verbal means.

In organizations the creation of information occurs when, for instance, transaction occurs. This constitutes a combination of existing data as well as information that resides outside the organization to create shareable information. Sverlinger (2000:27) noted that information is created when experience through socialization and externalization are internalized by individuals through experiences or technology know-how. Such a conversion may be facilitated through verbalization, use of diagrams, documents, manuals, or sharing experiences such as success stories.

Egbu and Jesse (2003:19) on their part identified the obligation or need to solve problems, managing of change and innovation as triggers of information creation in organizations in the UK. Eliss (1986:12) further identified the enablers of information

creation to include intention, autonomy, fluctuation and requisite variety. Intention as an enabler described as featuring in the form of stressing the significance of the "intent enabler" to be known to employees. Since it instigates commitment he noted that "commitment underlies the human information creating activities." Autonomy is explained as potential for bringing in creativity or introducing unexpected opportunities in the process of creating information. In studying information creation in public organizations, one needs to give attention to the way information is acquired, processed, disseminated or transformed and stored in order to understand it better. In information creation in public organizations, the librarian has been recognized as the key player because he/she must devise various means to gather informative materials in the collections of the library that would benefit his users. Data or information can be gathered by the librarian through collating of seminar, workshop and conference proceedings; downloading useful materials from other organizations' libraries; through resource sharing; and subscribing to relevant library collections. It therefore means that the Librarian is an important link in the information creation processes in any public organization.

2.4 Types of Information Resources Generated in Organizations

Mohammed (2005:24) gave the followings as the types of information resources generated in organizations: Oral or verbal information, which can easily be generated through interpersonal communication both at horizontal and vertical levels, meetings of all types, formal and informal discussions, lectures: seminars, symposia, workshops and conferences, etc. These media are not useful for utilizing the information so generated and gathered but, they are documented form of information. This form of information by its nature is transient and subject to corruption in form of misrepresentation, especially when

communicated to the third party. He further stressed that documented information is written information in form of formal and informal letters, memoranda, newsletters and bulletins, minutes of meetings, proceedings of establishments, etc. This form of information provides room for references and modifications whenever it is necessary, it also serves as legal tender in times of need.

The advent of IT particularly the computer, telephone, facsimile, video text etc and currently the Internet has given birth to the third form of information which is not affected by time and space during the process of generation, processing, storage, dissemination, transfer and exchange. When put in the right medium and packaged, it can be easily transferred and transported around the world in a couple of seconds or minutes. The media include Electronic mail (E-mail), G-mail, telex, telephone, fax, electronic, Internet and other means of satellite communication channels.

Mohammed (2000:25) furthermore stated that the type of information useful for an establishment largely depends upon its operations as dictated by the goals and objectives. There is no doubt that the management of an organization will require relevant information. The ability and capacity of the management to take the appropriate decision is largely a function of the available relevant information to be used. What is required therefore is the application of the IT devices to ensure the provision and access to the relevant information at the right time and place by the right persons in the right package. This study was carried out in order to reveal how public organizations can generate the appropriate information resources that is relevant to their organizational operations.

2.5 Electronic Information Resources in Organizations

Advances in Information Technology have brought about many changes in libraries. Information professionals have to switch over to new methods and techniques for handling information. In this context the role of information professionals is becoming very challenging. The optical storage technology has brought a change in information storage and retrieval systems. Library collections are growing multifold and electronic information resources are becoming vague. Almost entire gamut of primary, secondary and tertiary information resources hitherto embodied in print format are now available in the form of electronic databases. The Internet and its World Wide Web (WWW) have provided a platform to access information from remote databases. As a result, information resources available on web are increasing. In this changing scenario of handling information, the role of information professional is very crucial, as he has to act as a bridge between information and its end users. Information professionals have to coordinate and manage the task of introducing the users to electronic information resources.

To further emphasize on the usefulness of Electronic Information Resources. Kumbar, *et al* (2000:5) viewed that libraries with their traditional holdings in print format, are now being added with electronic information resources in various formats like CD-ROM and DVD-ROM databases, On-line databases, E-journals and plenty of Internet or Web resources. The content of these sources varies from bibliographic or factual or full text. Few of the electronic information resources are analyzed according to the views of Kumbar, Rao and Nargund.

CD-ROM Databases

According to Kumbar, et al (2000:50), CD-ROM databases are increasing day by day in almost all fields due to their many advantages in information storage and retrieval. Majority of publishers of books and journals, on-line vendors and various learned societies are bringing out new titles in CD format with powerful, user-friendly retrieval software. Electronic information resources in CD format include abstracting and indexing services, Encyclopedia, Dictionaries, Directories, Yearbooks, Back volumes, Patents, Standards and many other reference works. The CD-ROM technology has given ample opportunities for information professionals to introduce more information services to end-users.

DVD-ROM Databases

Kumbar et al had admitted that the advent of DVD-Digital Video Disc Versatile Disc, with its 17 GB of high data storage capacity, has made it possible to include more multimedia elements like video and sound and to integrate many reference sources on a single disc. "the other features like higher quality of sound and video, higher rate of data transfer, data security etc, are making DVD more viable option than CD-ROM. But, at present due to some problems like lack of standard among the manufacturers of DVDs and drivers, need for extra hardware or PCs and their higher prices are making the growth of DVD technology slow". Some DVD reference sources include Britannica DVD 99. Worker's International DVD Encyclopedia-2000, Grolier Multimedia Encyclopedia, Eyewitness World Atlass DVD-ROM Deluxe Edition. The Complete National Geographic on DVD-ROM etc.

Online Databases

Kumbar, *et al.,* (2000) further viewed that the recent growth of Internet and popularity and ease in use of Web are making libraries to subscribe to online information

services. The online database services like Dialog (KR Information) and STN are now moving towards being webcentric. The usage of online databases against their CD-ROM counterparts has to be evaluated and decided on the basis of cost effectiveness and timeliness. Few Online information services are KR ScienceBase and STN. The KR ScienceBase, which includes information sources like BIOSIS, CA Search, Elsevier Science Publishers, Reuters, NTIS etc. The STN international provides a complete collection of in-depth databases in science and technology which gives quick, direct links to the literature, patents and chemical catalogues. Chemical Abstract Service, producer of the world's largest and most comprehensive database of chemical information, offers several databases on STN like CAplus, INSPEC, MEDLINE, SCISEARCH, TOXLIT etc.

E-Journals

Kumbar et al further express that E-journals or Electronic Journals are gaining more importance with the emergence of Internet. The publishing world is undergoing a revolutionary change as more and more publications are becoming WEB centre. "Most of the publishers are choosing WEB as an access medium to make up the journal content so that it can be read using a web browser. These are also called as networked journals. Other publishers have chosen to use additional access software in conjunction with the WEB, the most popular being Adobe Acrobat and its associated Portable Document Format (PDF) file type.

INTERNET as an Electronic Information Resource

The INTERNET and its World Wide Web (WWW) have given a paradigm shift to information management. The information available on net is increasing rapidly and the task of providing relevant information to patrons is gaining paramount importance in all types of libraries. Most of the reputed publishers, learned and commercial societies are

hosting their products on net and also all libraries are sharing their internal and external information resources by means of web pages and Web-OPACs. The powerful search engines over net are aiding the information location quite efficiently. The Internet Services like E-mail. Bulletin Boards, Newsgroups, Discussion Lists, etc are gaining importance in libraries and are becoming indispensable resources for the users. Due to impact of Internet, there is a swift migration from offline to online, as Web is becoming a popular user interface for providing access to remote and frequently updated resources.

2.6 Information Resource Acquisition, Processing, and Dissemination in Public Organizations

Processing work ensures proper organization of information resources. Processing information resources makes the resources readily available for use.

According to Salami (2006:19), the beauty of any processing work is the end product, which is aimed at satisfying the information of library users. Processing work in librarianship is an indispensable tool in information resource management. According to him, processing work is subject to review from time to time as situation demands. Therefore, there is no one method or procedure for a particular task.

Processing of information resources starts immediately the material entered the library, in Collection Development or Acquisition Department, the materials will be stamped, labeled, keeping record which could be simple listing or statistical documentation, indexing, abstracting or computer processing and other processing which includes cataloguing and classification of library wares.

Cataloging is the description of a technical features of an information resources and the subject matter it treats, cataloguing is an act of listing various information resource materials that exist in a given library or information centre. The essence of these is to

enable the library users to discover, among other things, the different types of information resources available in their area of specialization.

The standard catalogue provides all the information necessary to prepare a catalogue card to classify an information resources. Preprinted catalogue cards are available to librarians from several sources. The practice of preparing catalogue cards as a result of original cataloguing-in-source and making them available to librarians everywhere makes it unnecessary to catalogue an information resources quickly and accurately.

Another Information Resource processing include classification, the classification schedule mostly used in libraries is the Decimal Classification Scheme and Relative index, originally developed by Mehil Dewey and kept up to date by Dewey Classification Scheme at the Library of Congress. The Library of Congress Classification Scheme, used by academic, research and larger libraries, is most suitable to extensive collection and is the second most used Scheme in libraries throughout the United States of America.

Dixon in Finnegan and Salaman (1999:29) had identified two models of acquiring information; an internal and external mode. Externally, she stated that information could be acquired through borrowing, searching, grafting or collaborative arrangement; with borrowing occurring for instance in attending conferences, or through reading printed materials. Acquisition of information through searching as in reading reports, interaction with customers or competitors; grafting as the recruitment of new members, acquisitions of mergers; collaborate mode, as in the joint venture schemes or consortia. Internally she maintained that information could be acquired through congenital means by understanding the history of the organization and the thought of the founders; learning from the experience as through successes and mistakes; experimenting such as in developing the

original innovations; investing new processes; implementing continuous process improvement and getting feedback on incremental change and through critical reflection such as in dialogue, questioning assumptions and norms. The "borrowing" and "searching" terminologies as defined above refer to attendance of conference and interaction with customers, suppliers, competitors and consultants while searching refers to reading of reports and printed materials.

Information dissemination has been viewed by Sverlinger (2000:27) as referring to the process by which an organization shares information among its units and members. Probst and Williams (2000:15) considered the right conditions for the knowledge sharing and distributions as: a trend towards group work where an individual is judged according to his contribution in the team; preservation of cultural knowledge such as avoidance of abrupt changes in the company structure; use of information and communication technology and space management. To further explain, Vito (1999:19) identified four components that influence the knowledge interaction between two or more individuals: the actors involved in the knowledge transfer process, the motive for the transfer, where the interaction takes place, the content transferred between the actors and the media that the transfer is significant of media capacity and richness in dissemination of information as vital in information transfer. Media capacity is explained as that which is able to process information at a high quantitative and qualitative level such as those relying on rules, form, procedure and database where impersonal media sources are dominant tools used. These include written and numeric document, e-mail, g-mail, telephone and fax. Media are characterized by a high level of richness as one where there is personal face to face involvement between actors. Brochner and Tonks in David (2004:17) similarly acknowledged the significance of media in the transfer of information. Dixon (1999:48)

observed that if the message transferred is subject to interpretation, a rich medium such as face to face be opted since it has the ability to construct cognitive map between the subjects and is able to resolve equivocally through discussion and rapid feedback.

One of the most difficult tasks in information resource management is to disseminate information to the right people or make organizational information available at the point where it is needed. Brochner and Tonks (2004:7) have considered that for information resource to be transferred, the availability of information is not enough, but mechanisms to ensure its absorption are essential. Dixon (1992:29) had considered dissemination of information occurring in what she termed "intentionally" and "unintentionally." Internationally involves the dissemination of written communication such as the use of memos, reports, letters (currently the Internet) or training as through formal courses, on the job training, internal conferences, seminars, briefing or internal publications. Unintentionally, she observed that the dissemination of information may occur through job rotation, task forces, informal networks, story and myths. The review of literature in this section has revealed the method used for acquiring and dissemination of information, which is important for public organizations as information managers require only the right type of information, for quick decision making to carry out organizational operations. The significance of information resource dissemination cannot be overemphasized in public organizations.

According to Argote and Ingram in Sippings (2000:41), information in organizations is the "process through which one unit (e.g. group, department or division) is affected by the experience of another." They consider information dissemination in organizations to manifest itself through changes in the information or performance of the recipient units, and that such changes can be used as a measure of information

dissemination in the organizations. This view was supported by Brochner and Tonks in David (2004:40) who emphasized the transmission process inherent in information transfer that "one sends or presents information to a potential recipient and the recipient absorbed".

Similarly, Cordey, Hayes and Gilbert (1996:57) had described information transfer as a means by which organizations can review their capacity to recognize the value of internal and external information as a means of generating information resources in organizations. Similarly, Vito (1999:19) considered information transfer as "strategy for enabling firms to have a competitive advantage."

Information dissemination is a critical factor for a firm to rapidly respond to changes, innovation and achieve competitive success. This study acknowledges the advantages and features that could be brought about by information transfer application and has taken a functional definition of information transfer as a "process made possible by carrying out particular activities and constitute the following process; information and information acquisition, information distribution, making meaning, organizational memory and retrieval of information and information flow."

Information dissemination is important for public organizations and the business trends that point to the importance of information dissemination include the increase of ventures, strategic alliances, acquisition and increased frequency of mergers are among the examples cited. Brochner and Tonks in David (2004:40) however cautioned that although organizations can realize remarkable benefits by transferring from one unit to another, successful information dissemination can be difficult to achieve because individuals who do not understand why particular practices are effective may not be adept at communicating their information to others. It is observed that organizations may not share

the information they process with each other and in-group society may impede information sharing across group and divisions in organizations. Information transfer is very important in the MPR due to their project-based orientation and the confidence base required from the public to ascertain their efficiency and satisfaction of their services.

2.7 Information Resource Organization, Storage and Retrieval Methods in Organizations

With the growth of information resources in organizations today, it becomes obvious that some forms of control are necessary to use any piece of information to satisfy specific enquires.

The objective of information resource organization is to create an organizational memory that is the active repository of the organization. The Volumes of data that are produced and collected by the organization need to be given some structures in ways that reflect the interest and information modes of the organization and its members. Davis (1999:32). This is found relevant to the present study because public organizations generate volumes of information. However, such transactional information that is generated and acquired needs to be systematically organized in a particular order to avoid information saturation, information lost and information explosions.

Similarly, in a study conducted by Gantz *et al.* (2008:12) He observed that wider organization of information is achieved by the librarian who arranges the collection of books and journals in a subject sequence. Encyclopedias are easily organized in summary form to a whole field of knowledge. These and other groups try to collect, digest and collate the existing information hoping to ease the task of access to users. This study is relevant because it emphasized that proper information resource organization is a tool for effective information resource management.

According to Aguolu and Aguolu (2002:45) to organize information, classification scheme such as LCCS, DDCS and others can be used. The item i.e. books, journals or cassette is put in the subject area it belongs to and this is identified by a code or class mark. This is found relevant to the study because class mark or call number is important in locating information; it tells exactly where information would be found. Such information is organized and arranged in the appropriate shelves, drawers and so on depending on the types of information they are. Similarly, Aderson (1999:14) Opined that catalogue card gives information on information resources which are filed in the card catalogue cabinets for easy access.

Madu (2004:10) opined that Information resource organization method may range from simple catalogue to a high index system either manual or automated. In the recent time information is organized with the application of computers to cataloging (OPAC).In the same vein, Ajibero *et al.*,(2002:7) asserted that a detail holdings of a particular library resource organization or a database and to which user have direct access OPAC allows a particular work to be informed of location. This can be introduced in public organizations to organize the volumes of information produced. Modern technology can be applied to Public Organizations to create new forums for global information access among government organizations in the country i.e. access to intra resource sharing.

Mantistino (2002:11) remarks that effective information organization can be achieved through an appropriate information technology. IT has made it possible to handle information in variety of forms. Electronic infrastructures and facilities are employed in organizing information resources to improve and provide efficient services. Such facilities in broad terms consist of hardware and software grows rapidly and has reached a stage

where it is almost impossible to retrieve information resources timely from the wilderness of these literary outputs.

Similarly, according to Penn (2000:20) an index is a retrieval tool, it is the first finger which points the way. It is a catalogue which directs users to books required from authors, title or subject. Similarly, Rowley (2000:5) opined that information retrieval method is the science of searching for document or information resources which helps to satisfy specific enquiries. This is related to the present study because public organizations with huge collections need to control and provide timely access to information that is needed for operation to ensure positive results. Modern technologies are require for better access to required information needed for better service delivery function in government organizations.

2.8 Methods and Mechanisms of Processing Information Resources in Public Organizations

There are various views on methods and mechanisms of information processing in organizations' transfer. Four was identified by those who have envisaged the mechanisms as occurring through: information reservoir, organizational characteristics and information conversion managerial practices, information conversion process and information transfer process.

The Information Reservoir Concept School to which Argote and Ingram (2000:41) belong conceptualized information processing to occur through personal movement, training, communication, observation, technology transfer, reverse engineering, product, replicating routine, patent, scientific publications, presentations, interaction which suppliers and customers, alliances and other forms of inter-organizational relationships. In their approach to information processing they conceptualize information as being

embedded in three basic elements of organization: number, tools and tasks, and sub-network. They posited the idea and the three basic reservoirs in varying circumstances from various networks. These may be member-member as in the social interaction of the members in organizations, task-task networks in sequence of tasks and routines, or tool-tool networks where there is combination of technologies in use. Other possible combination include: member-task networks where members are assigned tasks, member-tools network when members work with tools: task-tools networks, which specify which member performs which tasks and with what tools. Based on such an approach, they are of the view that an organization's performance improves with increase in both internal compatibility of the networks and their external compatibility with other networks. For instance, an organization's performance is enhanced when the member-task network allocates tasks to the members most qualified to perform them, similarly when members have the appropriate tools to perform the task allocated to them. For information processing and transfer to effectively occur, these reservoirs and networks are suggested with a condition that they are made compatible within themselves and to a new environment. Roth in Helvey (2001:96) added that information processing in organizations exist in four different carriers: the individual, the small group, the organization and inter-organizational domain, such as important customers, suppliers, and competitors, with each carrier possessing different forms or aspects of information such as cognitive information resources in the form of constructs and precepts, skills and information embodied in product or well-defined service or artifacts. The organizational characteristic identified to facilitate information processing and transfer include what Goh (2002:25) described as leadership style; problem seeking/solving behaviour, presence of support structure such as technology, training, skill, development, rewards and

organizational design; absorptive and retentive capacity and types of information. Under managerial practices, he emphasized a high level of trust between individuals and work groups, an aspect emphasized by Davenport and Prusak (1998:9) who similarly advocated for a strong and pervasive culture of cooperation development through work practices that encourage and allow individuals and groups to work together.

Davenport and Prusak (1998:9) further encouraged a strong culture of continuous improvement and learning linked to problem seeking and problem solving that is focused on specific values such as product quality and customers service- a feature they stated that could be facilitated through incentive; an organization structure that encourages horizontal communication and few hierarchical barriers; consistency of skill levels and competencies among employees; a structured approach to encouraging sharing and transfer of information resources through structured processes such as sharing best practices and lastly, a reward system that does not only focus on finance.

Both Cordey-Hayes and Gilbert (1996) and Vito and Simpson (1999) had taken information resource acquisition, communication, application, acceptance and assimilation as the key processes in the transfer. Sverlinger (2000) adopting and modifying Dixon's (1992) model on organizational learning has more or less similar processes that he identified as information acquisition, distribution, making meaning, organizational memory and retrieval. Information transfer as revealed in the literature reviewed is very helpful in organizations. It is expected that if information is transferred correctly in public organizations, the organization will be able to perform its statutory functions satisfactory.

2.9 Information Management in Public Organizations

Management of information is extremely important in every organization. It is concerned with how records are kept, the way in which they-are maintained, the accuracy

and currency of information at any given point in time, the sources used and the criteria that are adopted in collecting relevant information resources to the organization.

The term information management describes the means by which an organization efficiently collects, creates, organizes, uses, control, and disseminates information.

Information management recognizes the fact that information is a resource which needs to be managed like any other resources such as human, material and money. Information management ensures that the value of information is identified and exploited to the fullest extent, both in support of its internal and external operations, adding value to its service delivery functions. According to Allen (2005:8) 1nformation management can be viewed as a response to, and a search for new and improved means of controlling the information explosion and the resultant increasing complexity of decision-making by improving the flow, the control, analysis and the synthesis of information for decision makers, Frishammer (2002:24).

Six distinct but related information management processes are: identifying information needs; acquiring information; organizing and storing information; developing information products and services; distributing information and utilizing information. This shows that information management is expected to give answers to what information is needed, why information is needed and how it is maintained.

Information management therefore, is a way of monitoring and providing key members of an organization with data, facts and ideas used in its operation. It is a formalized procedure for providing information at all levels, in all functions, with appropriate information, from all relevant sources (both internal and external) to the organization which enables them to make timely and effective decision for planning,

directing, and controlling the activities for which they are responsible, Lucy (2002:49) asserted that the key objectives of information management are summarized as follows:

- To improve communication, information transfer
- To improve access to internal information
- To improve document/report processing and preparation
- To improve event tracking/resource management
- To improve access to external information.

One of the greatest challenges facing most organizations is how to most effectively and economically manage, control and maintain an ever expanding information explosion at all levels to government especially at the local government level. In public sector organization, a large proportion of budget is spent on information handling activities of one type to another. Information is vital to progress and development in human life and that is the reason why information needs to be managed at all government levels to support management functions and assist the achievement of organizational goals.

According to March and Simon (2008:13) in their study on information management. it is from one or more sources and the distribution to one or more audience. Management is the organization and control of information. Seppecassetari (1999:15) describes information management as a way of keeping and maintaining information records, the accuracy and currency of the information at any given point in time. This method is used for acquiring, organizing, storing, retrieving and disseminating relevant information. They further argue that the success of management functions can only be achieved through collections of the right information in the right way.

In view of Karen, (2001:14) information management is a system approach that visualizes the business of organization on a single entity that is composed of various inter-

related and inter-dependent sub-systems, working together to provide timely and accurate information to management for decision making, reference, research and administrative purpose which leads to optimization of overall enterprise goals.

Lucas, in Ligon (1999:23) defines information management by enumerating four levels of information management as:

i. Classification of Data: these provide the identification of groups and related classes.

ii. Establishment of procedure for recording data in a manner facilitating recall yet sufficiently simplified to enable the operation to be reutilized.

iii. Summarization of data classified.

iv. Specification of the collection procedure of the record.

James (2005:5) expresses in his articles that information management is an umbrella term that encompasses all the system and processes within organization for the creation and use of information. He observed that information management encompasses people, process and technology. Similarly, Schwartz (2003:30) gives an overview of information management as a system of people, equipments, procedures, documents and communication that collects, transforms, stores, retrieves and presents data for use in planning, budget, accounting, controlling and other management processes. These definitions above give an overview of information management in organizations such as government organizations were information is managed and controlled using people, documents and procedures to transform data for effective transactions of activities within the organization. Information management is seen as a system of both human resource and procedure which collect, select, store, retrieve and disseminate information for effective long-term and short-term planning in organizations.

Information management (IM) is a branch of management, which makes it a social science. Also it is a branch of management that seeks to improve performance in business by enhancing an organization's capacity to learn, innovate, and solve problems. The purpose of information management as earlier explained is to enhance organizational information processing, and knowledge management as an interrelated set of activities whose purpose is to enhance information delivery.

According to Probst and Williams (2000:15), information management is a building block and also a process-oriented approach and more or less involves the processes of information acquisition, dissemination, making meaning, organizational memory and retrieval. Egbu and Jesse (2003:19) acknowledged information management as being varied based on the individual organization's perception and awareness of their information-base and their approaches to exploiting and enhancing it. They gave the definition of information management as constituting "the creation of a work and learning environment that fosters continuous creation, use and re-use of both organizational and personal information in the pursuit of organizational value. The definition is similar to Robinson and James (2004:18) that viewed information management as constituting any process of creating, acquiring, capturing, sharing and using information, wherever it resides, to enhance learning and performance in organizations.

Apostolou and Menzas in Cook (1999:25) asserted that information management could be seen as creation, processes, technology and those that had opted for a holistic approach. A vast majority of information management writers acknowledge the process orientation, which considers internal benchmarking and transfer of best practices as the most tangible manifestation of information management framework. It follows that Goh's (2002), Sverlinger's (2000), Vito (1999) and Cordey-Hayes and Gilbert's (1996)

information transfer models, Dixion's (1999) learning cycle and Dixion's (1992) organizational learning model, belong to this category of information management. The third category includes those focusing on technology. A lot of emphasis has been placed in creating and understanding the role of technology in the management of information. Some have viewed technology as an enabler process. The last category refers to those that had opted a holistic view that has a framework of an interdisciplinary nature that explicitly and with equal weight includes technology, processes, organizational structures and cultural issues.

Vickers in Whitehead (1987:37) maintained that information management is a new element in the practice of organizational management. In his view an organization can be said to be practicing information management only if the following conditions are met:

(a) Information is regarded as a basic resource like money, manpower and materials.

(b) Some within the organization are specifically responsible for managing these resources.

(c) There is coordination of the development and use of information sources, services and expenditure on information resources.

Information management is important as it affects all processes in an organization. It is a function that can be exercised independently of using computers but the two (manual and computerized) cannot operate independently without the other in modern societies because data manipulation and information flow are critical to the management of organizations and a faster mechanism to manage it is vital. Modern information management relies heavily on computers to process reliable, useable and timely information to the satisfaction of the end user. Woodman in Cronin (1985:98) described information management in the following words: "information management is all about

getting the right information, in the right form, to the right person, at the right place, to take the right action." This description places emphasis on the acquisition of the relevant information, in the appropriate format to the actual information seeker who needs the information within prescribed time limits, by the organization to enable the user take the appropriate decision. Information management as a term has come to mean something quite different to those who have spent their lives trying to keep abreast of information in organizations. Disraeli in Hollingdale and Tootill (1965:84) as far back observed that "the most successful man is the one who has the best information." Never has this been more important than today as executives and managers in both industry and commerce struggle to keep ahead of their competitors based on the information they receive. Whitehead (1987:20) identified three components of information management, which are information resources, technology and management. The three components identified above clearly show that in managing information in an organization, the three key areas that must be borne in mind by the information manager are the information resources, technology and management. Information resources constitute the collection. In a library there are books, serial publications, theses, government documents, conference papers, etc. In an information centre or organizations these resources include reports, memoranda, correspondences, minutes of meetings, plans, financial statements, project documents, seminar papers, etc. The technology consists of the use of modern systems such as computer and other ICT equipments to store and retrieve information. The other new technologies are e-mails, g-mail fax, telex, videotext, microfilm, microfilm, microfitche, disc etc. Management implies the principles of management and controlling of human material resources, interpersonal communication between the information centre personnel and information users, budgeting for the information centre requirements, accounting for

items purchased and publicizing the information and information services provided by the organization. Management in general has no definite definition. An early definition by Henry Fayol in Lucey (1990:87) remains relevant and has served as basis for modern version. Fayol's original definition maintains that "to manage is to forecast and plan, to organize, to command, to coordinate and to control". Management is a process, which takes place at all levels in an organization. It is not carried out only by people in management positions, but section heads, supervisors, chief clerks, foremen, etc all carry out managerial functions although not all of the same type or of equal importance. The bottom line is, information remains the basis and a very vital component in coordinating every activity in any given organization.

Organizations operate in a world of unpredictable monetary, fiscal, tax and regulatory policies, business cycles and recessions, abrupt changes in trade policies, domestic and foreign competitions political and social dysfunctions, changes in market places and rising labour costs. To avoid failure, survive and achieve success, organizations must exploit the right information resources for the management, product and service differentiation to increase productivity. Therefore information is the primary resources that can help management to produce products and services, and enhance productivity and penetrate the competitive environment. It should be noted that quality information resources supports the organizations to reach goals in management, superior products and services and greater productivity and success.

2.10 Protection, Security and Preservation of Information Resources in Public Organizations

According to Clement (2002:18,19) information can be lost, if the medium which carries it is not protected and preserved in a form and format that can be used. Protection, security and preservation of information resources is set out to ensure information survival and the use of the same when the need arises. To achieve this, there should be buildings that are well ventilated and render no harmful condition, offensive gases/odour, water linkages, vapour and dust generated within the working environment.

Afolabi (1991:12) noted that preservation is the measure taken by information managers to protect their recorded information from deterioration. John (1991:25) on the other end observed that our information carrying media are not permanent and they never can be. To protect and secure the information resources for future reference therefore, the media which contains the information have to be preserved properly. Akusah (1996:101-106) also shared view about the environmental hazards on information resources; he suggested measures to control the hazard. He further discussed conservation and protective measure against the enemies of information resources. He listed them as temperature, humidity, dust, water and vapour, virus to computer file, insect, warms, reptiles and human enemies (multilation). He further suggested standard building with good ventilation, well lighted rooms and surveillance of any form, be it human or machine to secure the information resources.

Schellenberg (1995:11) observed that to preserve information resources, space has to be provided (enough space). He further explained that if information managers lack space to accommodate records, it will be difficult to prevent their destruction from insects, sunlight and humidity. Russel (1974:16) way back asserted that despite the measures taken

to prevent fire and water damage, this mistakes still occur in public organizations. It is essential for every organization to have a standard restoration and salvaging programme for fire and water damage on record. The information resources should have restoration facilities such as photocopies/duplicates of information resources. Moderate temperature should be maintained to restore information resources in extreme cold or hot periods.

Information Resources of all kinds and types needs protection, security and preservation from being damage, stolen, mishandled, multilation and destruction. The Section 21 of the National Institute of Standards and Technology Act (15 U.S. Code 2012:4-9) emphasized on the need for 'Information Security' this means protecting information and information systems from unauthorized access, use, disclosure, disruption, modification or destruction in order to provide:

a. integrity, which means guarding against improper information modification or destruction and includes ensuring information no repudiation and authenticity.

b. confidentiality, which means preserving authorized restrictions on access and disclosure, including means for protecting personal privacy and proprietary information; and

c. availability, which means ensuring timely and reliable access to and use of information

The section of the Act 15 US code (2014:4-9) in general provided the Director as the head of his organization with an authority and function to oversee agency information security policies and practices, including:

1. developing and overseeing the implementation of policies, principles standards, and guidelines on information security, including through ensuring timely agency adoption of and compliance with standards promulgated.

2. requiring agencies, consistent with the standards promulgated and the requirements to identify and provide information security protections commensurate with the risk and magnitude of the harm resulting from the unauthorized access, use, disclosure, disruption, modification or destruction of (a) information collected or maintained by or on behalf of an agency; or (b) information systems used or operated by an agency or by a contractor of an agency or other organization on behalf of an agency.
3. coordinating the development of standards and guidelines.
4. overseeing agency compliance with the requirements, including through any authorized action to enforce accountability for compliance with such requirements;
5. reviewing at least annually, and approving or disapproving some agency information security programs required;
6. coordinating information security policies and procedures with related information resource management policies and procedures
7. overseeing the operation of the Federal Information Security incident center required;
8. reporting to congress earlier every 1st quarter each year on agency compliance with the requirements, also they ensure that the Agency Chief Information Officer, in coordination with other senior agency officials, reports annually to the agency head on the effectiveness of the agency information security program, including progress of remedial actions.

The security Act was constituted in order to provide adequate security to organizations in the United States of America, it contains information unauthorized usage and destruction as a measure to ensure their organizations information are well protected.

According to Dunn (2004:16), an important factor in protecting information resources is the provision of adequate security measures, to protect the people working on the materials in the library and to protect the valuable information resources housed in the library. A number of security measures can be implemented at little or no cost; some other measures are more expensive or time consuming. The decision about what type of security measures are required and to what extent will depend on the particular needs of each institution. Regardless of the systems implemented, security measures should be based on good planning, to ensure budget and staff limitations are taken into consideration. Before any security measures are put in place, Dunn (2004:16) said it is important to assess the security needs of the institution and determine the possible effect of security procedures on staff, users, and the information resources. New security processes can be intrusive and distruptive and so need to be chosen with some consideration of how staff and users will accept the changes. Some questions should be answered as part of a security assessment. These questions relate to the security of facilities and buildings, and to the activities of staff and users. Many of the questions relate to security for libraries but are equally important to consider when ensuring the security of current and essential materials.

Once a security assessment has been completed, the next task is to implement specific security measures, in order to reduce risk. The main risks to information resources according to Ling (1998:18) are fire, flood or other physical damage, as well as theft or vandalism. Any security programme should be developed in conjunction with an emergency plan, designed to protect information resources from loss or damage. Trinkans-Randall (1995:28) suggests the following steps to prepare staff:

- Screening new employees carefully to ensure they are trustworthy and that they understand the importance of protecting the materials in their care.

- Train staff on security procedures, including technique of observation and appropriate methods of approaching patrons who may be mishandling or abusing materials.
- Ensure all staff wear appropriate identification tags and challenge anyone not holding appropriate identification.
- Consider identifying one or more individual to serve as security officers, who will monitor the reference and storage areas and ensure that records, information resources and individuals are safe and secure.

Security measures should also be applied to visitors to the library, for example, all visitor should register upon arrival, and users of information resources should properly registered and identified. The user should also provide his or her identification and registration card before allowing into the area of information resources.

On preservation of information resources, preservation is a term referring to the passive protection of information resources material in which no physical or chemical treatment to the material occurs. Harvey (2005:25) wrote that preservation may be viewed as the totality of processes and operations involved in the protection of information resources against damage or deterioration. Harvey observed that Preservation may involve four related activities:

i. **Maintenance:** The daily care of information resources particularly in general environment that users visit frequently, maintenance ensures the general protection of information resources against environmental hazards or other physical dangers.

ii. **Examination:** The preliminary procedures taken to determine the materials and structure of an item and to determine the extent of its deterioration, alteration or loss.

iii. **Conservation:** The intrusive protection of information resources, by the minimal physical and chemical treatment necessary to resist further deterioration, which will not adversely affect the integrity of the material.

iv. **Restoration:** The repair of an item which aesthetics and reproduction of the original appearance is more important than the preservation of the integrity of the item.

Preservation planning is essential for good Information Resource Management. Harvey (2005:25) stressed the need to focus on preventive preservation measures and ensure adequate environmental and physical control and to focus on conservation treatments for one object to the exclusion of others in the library. In his opinion, preservation should operate as part of the overall management of the library. Preservation policies and plans need to be coordinated with other organizational requirements for best results.

Accordingly Merrillin (2006:8) viewed that the best and most cost-effective way to protect information resources is to ensure the good and orderly physical and administrative management of the entire organization. Good preservation practice is required throughout the institution. The selection of good quality equipment in offices will result in a good service, which not only assists the users but also minimizes the damage done to the information resources as a result of them being used. Preservation to a good standard is not inexpensive, but is much less costly than having to send large proportions of the material for repair. Repair damaged materials should be a last resort.

Harvey (2005:25) further adviced that when developing a preservation plan, it is important to establish clear priorities. Not all materials require special storage facilities. Environmental control can be critical for the management of electronic materials, for example, but they will be less important for the management of records destined for destruction.

Chapman (2000:20) gave steps in preservation plan, she said preservation encompasses many activities including:

- conducting a preservation survey to assess the present state of care of information resources.
- Storing material properly
- Maintaining environmental conditions suitable to the materials stored.
- Providing accurate and detailed means of access to avoid over handling of information resources.
- Handling materials carefully.
- Deading whether damaged material should be sent to conservation.
- Maintaining disaster control plan

2.11 How Information Resources are Used by Managers

It is evident that the nature of managerial jobs must determine the kinds of information resources the managers' use, how and where they find it, and what they do with it. The traditional view sees the managers' job in terms of functions such as planning, organizing and decision making, staffing, controlling and budgeting. These are indeed important outcomes of managerial activity, but they tell us little about what managers actually do, and how they think about and reflect on their work. Perhaps the best known is

that of Mintzberg (1973:13) who concluded that all managers' jobs are similar and can be described in terms of nine roles and these groups are as follows:

Interpersonal (Figurehead, Leader, Liaison); Informational (Monitor, Disseminator, Spokesman); Decisional (Entrepreneur, Disturbance Handler, Negotiator) all these three groups depends on the uses of information resources for their success. The managers in organizations must possess the qualities above in order to have the ability to manage their office effectively; therefore, they need the right information at their disposal. Mintzberg is of the view that other studies have stressed the importance of management functions such as communication, human management agenda setting (determine goals and priorities, etc) and network building. Managers in organizations require subordinate staff to handle information with care and provide quality information when demand arises.

Information plays an important role in modern societies as it serves as the key to economic success. Buckland (1991:10) distinguished the meaning of the term "information"| where he gave three meanings of it viz: Information is a process, Information is informing, and information is a thing. He attributed this difference in interpretations to things regarded to as information, and he noted the characteristics of the things regarded as information to include data, text, documents, objects, and events.

The success of organizations is seen in terms of their ability to manage and organize information into products and services. The usage of the term information had started a long time ago. Scott (1996:97) believed that the most important component of management information system is the manager, whose mind progress is to disseminate information and interacts with all other elements of the management.

Management is a practice. It is a performance based on knowledge, skills and responsibility. If a manager is to be effective, he/she must practice management using all

four of these attributes through thus practice the purpose and scope of the library mission should be defined, work should be organized logically so that employees achieve a high level of productivity and relationship between the library and the society in which it operates should be maintained. Management is an act of controlling, planning, directing, motivating of business in any organization where information resources are kept, they will also have to be looked after and controlled as they have been used to avoid mutilation spoilage, mishandled or theft.

Sharon and Williams (1995:18) reported that several executives in businesses have developed personalized information sources to help them in finding desired information. According to him this is a silent way of registering their dissatisfaction of organizational information systems. In addition, many executives in marketing have made it clear that the existing information is not satisfactory, as a result most managers in marketing have developed personal information systems that are supported by direct observation and inter-personal contact within and outside the organizations. Another clear evidence of dissatisfaction with corporate information system is the outsourcing of information by organizations. The question, which easily comes to mind during a discussion about outsourcing is that, why do companies outsource information in spite of its strategic advantage? The reason can be either the corporation has given up any hope of getting value from information/computer technology or it may be due to the substantial savings offered by outsourcing which provides a tremendous short term benefit/savings that is irresistible. In any case outsourcing of information resources is a strategic suicide as Boar (1995:20) questioned "you don't turn over your company's strategic (information) advantage to mercenaries (outsource)." Boar was of the view that what needs to be done is to put all mechanism needed for relevant information resource provision in place within the

organization, like getting the appropriate ICT and qualified information officers so that quick and relevant information resources can be made readily available for them to take the right decision.

At this juncture it is pertinent to ask the question, what are the reasons for the failure of information and communication technology (ICT) to deliver the necessary information in spite of the heavy investment by corporations on these technologies? Many scholars and practitioners have conducted studies in order to get empirical evidences that will provide explanation to the problem. Majority of the research conducted to ascertain answers to the problem have found inadequate information support as one of the most important reasons, which impedes the inability of the computers to support the most needed information to employees in organizations. What this means is that many organizations have computer technologies in place but do not possess the right portfolio of information to enable them rapidly formulate and develop information support to employees, Hussey, (1990:10).

Kumbar, Rao and Nargund (2000:50) asserted that; the money and efforts involved in the procurement of electronic information resources are going in vain due to their under utilization. The reasons may be attributed to lack of awareness among users and intermediaries, training and orientation and less interest on part of information facilitators. "Despite tremendous publicity and excited curiosity about Information Technology in general and electronic information in particular, substantial underutilization of imported IT products, services, tools and means can be seen everywhere. One of the important reasons for underutilization of electronic information is lack of requisite level of working knowledge and consumption skills among users and information intermediaries". Users education or instruction in most of the libraries has lost its credibility, as there are no

definite user orientation programmes except providing a copy of rules and regulations of the library. There is a pressing need for methodological approach towards instructing the users for maximum and optimum utilization of electronic information resources.

Managers in every sphere of life need quick and relevant information to take decisions to perform the managerial functions. Quality information in organizations produces quality work done and greater productivity. It is imperative that organizations must employ quality information officers to carry out management of information in order to achieve effective and efficient service delivery. Modern Information and Communication Technology need to be in place and in proper condition to provide quick and relevant information to managers as well as to hasten service delivery.

Managers also need to posses the qualities of a good leader as the head, and he/she needs to work in harmony with the subordinate staff, taking into consideration problems encountered by every staff and providing solutions, especially when it relates to the job. It is obvious that the manager is concerned not only with tasks; he has to deal with people and must take into account their attitudes in order to be able to work with them effectively. For Brophy (1986:2) in his discussion on management levels agrees that this is the most important strategy to use to get the best management of information resources. Kumar, Rae and Nargund (2000:43) in their view suggested that there should be proper planning and definite programmes for the introduction of electronic information resources to users. The programmes must be intended to assist information professionals who provide and publicize new electronic information resources to users. With increasing influx of electronic information to libraries, the user orientation programmes must be implemented specifically to electronic information resources with view to reduce monotonous workload. There must be proper set guidelines for information service providers, who coordinate and

manage the introduction to new electronic information resources and these guidelines must offer practical guidance to library staff who are concerned with strategies for implementation, policy, procedure, education or direct provision of electronic information services. While planning for user instruction programme, specifically for the maximum and optimum use of electronic information sources, Kumar, Rae and Nargund suggested the following factors that must be put into consideration.

1. After procurement of new electronic information resource, the library should determine which staff will be involved and what their specific responsibilities and assignments will be in the user instruction programmed.
2. The level of need for formal and informal user instructions must be ascertained and planning for user instruction should accommodate various learning styles like individual and group assistance, peer assistance, system tutorials, documentation etc.
3. The information professionals who are part of user instruction programmed must acquire in-depth knowledge of the electronic information resources. This must include hands-on practice, system tutorials, peer instruction and study of appropriate manuals and other related documentation. The possibility of outside trainers or experts must also be considered.
4. Proper publicity of various electronic information resources must be done to draw the attention of users. The publicity or extension programmes must incorporate a variety of communication modes and formats including print and electronic ones;
5. The library should conduct regular evaluations and assessments to determine the effectiveness of the electronic resources in meeting information needs of the users.

2.12 Personnel/Officers involved in Information Resource Management in Public Organizations

Generally speaking, success is achieved in an organization when personnel/officers work in harmony to achieve the organizational goals and objectives. It therefore means that personnel/officers that are involved in the management of information resources must have the ability and skill, plus the willingness and job satisfaction to bring about productivity in the organization.

James (2005:7) was of the view that management of information resources affects the way they are planned, organized and the way staff are mobilized to work. Information managers have different choice of leadership style necessary for execution of work. The choice is sometimes due to job challenges and the availability of supporting equipments. Afolabi (1991:12) is of the view that psychological and physical concepts need to be balanced before optimum actualization of any staff. This is in line with Ayeni (2000:18) who observed that paying attention to human interaction is a key factor to organizations' achievement. He explained in terms of authority, status and role and their role must be defined and maintained so that the people can work together to accomplish the objectives and goals of the organization.

Penn (1963:20-24) asserted that without proper training information resources cannot be protected, management is a practical based on knowledge, skills and responsibility. This requires that organizations should properly motivate their staff to enable them put interest on the job to acquire the skill. Lack of motivation of course gives room to negligence of duty, which can lead to adverse effect like losses and misplacement of information resources and even mutilation by users. Lucy (2000:49) viewed that information services stands or falls according to the quality of its staff. Staff need to be

sufficient and efficient in quality to be involved in IRM. Working with less qualified staff may lead to unprofessionalism on the part of the information manager and adversely allowing valuable materials in their collection to be multilated, deteriorated, mishandle or stolen, and adversely information resources not properly managed.

2.13 Effects of Information and Communication Technology on Information Resource Management in Organizations

Quadri (2012:19) stated that today libraries are shifting their role from the custodian to traditional information resources to the provider of service-oriented digital information resources. Widespread use of computers, increased reliance on computer networks, rapid growth of the internet and explosion in the quality and quantity of information compelled libraries to adopt new means and methods for the storage, retrieval and dissemination of information.

According to Williams and Channareeraiah (2008:19), the modernization of libraries and information centres enabled information transfer and access, thereby establishes a network of libraries and information centres. This initiative helped in resources development, resource sharing and their utilization at various levels. Information seekers subscribes to e-journals, CD-Rom, databases, online databases, web-based resources, and a variety of other electronic information resources, they participate in library consortia and build digital libraries. However, these libraries have been hampered by many constraints to embark on successful application of information and communication technology (ICT) for their operations, resources and services.

In this age of globalization, the importance of ICT to people cannot be overemphasized. This is true because ICT facilitate quick and easy access to a wide range of information resources worldwide. Infact, it is now difficult to imagine a world without

Information Technology. The provision and use of ICT is part and parcel of the entire system, to both the students, information professional, researchers and the institutions. It is one thing to recognize the importance of ICT and another to know if they are effectively used by professionals, students and staff in organizations. If ICT are put to effective use, the essence of acquiring them is to a large extent justified vice-versa.

Ebijuwa (2005:23) defined Information and Communication Technology as tools used for collection, processing, storage, transmission and dissemination of information. With advances in ICT, electronic information resources such as electronic books, electronic journals, CD-Rom database, OPAC, online databases and the internet have launched the world into an information age. No institution or organization can still rely on only traditional printed information resources to perform effectively and efficiently. To librarians, ICT is a significant development that provides tools for managing available information generated by modern society.

According to Quadri (2012:5) ICT have become umbiquitous with current and future social and organizational development. The role of these technologies in national development is undeniably a significance. As the positive effects of ICT have continually been noted in developed libraries it has become critically important for developing libraries to embrace these technologies. ICT is a "powerful enabler of development" because of the significant impact on the economic, scientific, academic, social, political, cultural and other aspects of life. In higher education and human capacity building, there are significant patterns of change, because ICT are impetus for change in traditional concepts of teaching and learning, as well as prime motivation behind the change in scholarly and professional activities.

Library and information science academic have witnessed not only this increasing globalization of higher education but also that of the library and information science work place including the consequent extension of competition beyond tradition, institutional, nation and regional boundaries. ICT are significant in the achievement of library and information science educational goals/objectives and the fulfillment of the primary tasks of library and information science schools.

Suffon (2001:241) observed that the changes brought into the library and information science profession by ICT can be divided into two major categories, namely; the natural evolutionary changes, on the one-hand and transformatory changes on the other. As natural evolution, the library and information science has harnessed ICT to perform old tasks better through the automation of housekeeping tasks such as reference work, bibliographic services, cataloguing, serials, circulation and acquisition, which are performed more efficiently in an ICT environment. Transformatory changes, on the other hand include the emergence of new functions arising out of an expanded, demand-driven information society, wider and/or interdisciplinary jurisdiction and closer focus on user needs.

These transformative trends represent systematic changes that substantially alter the boundaries of the profession. For example, Feurier and Bathma (2006:89) observed the increased use of the worldwide web in private, social, business lives of many people and hence noted that it is a vital component of the enabling structure for school, university, career, organizations and other use for information and communication. This one platform exhibits the fact that those involved in information services need to be sufficiently prepared to handle both the users information and the attendant technologies. Thus, knowledge of networking, communication and retrieval technologies has become core to the profession.

Curry (2000:25) stated that as distinctions continues to blur between telephones, television and computers, information professionals and library and information science graduates have to be able to navigate information networks competently so as to provide relevant services and materials for their users. Consequently, library and information science curricular needs to consolidate ICT concepts, knowledge, skills and proficiency into core competencies, and library and information science schools need to provide adequate content and practice that will enable libraries and researchers to adapt and use ICT effectively.

Information technology has been referred to by Rowley (2000:32), as any of or all the following:

1. The acquisition, processing, storage, and dissemination of vocal, pictorial, textual and numerical information by a combination of computing and telecommunications based on micro-electronics.
2. The scientific, technological and engineering disciplines and the management techniques used in information handling and processing, their applications, computers and their interaction with man and machines; and associated social, economic and cultural matters.
3. Information technology means the collection, storage, processing, dissemination and the use of information. It is not confined to hardware and software, but it acknowledges the importance and the goals set for this technology, the value employed in making these choices, the assessment criteria used to decide whether it is controlling and being enriched by it.

While all the three definitions fulfill the divergent approaches of people from different orientations and educational backgrounds, the first and the last points are

pertinent to this work. This is because this study, apart from other things examines how information and communication technology is used for acquiring, processing, storing, retrieving and disseminating of information in the Ministry of Petroleum Resources. The application of computer technology in information resource management, particularly in special libraries has been regarded as enhancing the effectiveness of their services. In this regard, Tedd (1981:28) identified some values of computer technology in libraries as:

(i) To manage a process more rapidly, accurately and less expensively, for example, sorting, filing and storing.

(ii) To help overcome increasing library workload.

(iii) To offer new and improved services to both users and library staff.

(iv) To make use of external services through searching data banks.

(v) As a solution in formatting common system when libraries merge.

(vi) To enhance bibliographic control as an attempt to cope with information overload.

Some Nigerian special libraries have computerized their services for effective delivery. Adeniran (1984: 4) reported that International Institute of Tropical Agriculture (IITA) Library, Ibadan started it's automation in 1984 using a computerized database called BASIC Automated Library and Information Service for Tropical Agriculture. The Nigerian Institute for International Affairs (NIIA) had a data processing unit which was used to train staff, do word processing, and maintain membership list and catalogue cards. The Federal Institute for Industrial Research Oshodi (FIIRO) Library in Lagos had micro-computers, which compiled and ran application programs, operating systems programs, copied and edited files and undertook word processing.

Commenting on the meaningful contribution of the application of computer technology to effective special library services based on his experiences as an

indexer/bibliographer at IITA Library and Documentation Centre, Ibadan, Azubuike (1987:8) observed the extent to which the computer contributed to faster and more efficient cataloguing, information retrieval, bibliographic compilations, circulation control, and other duties made most librarians to conclude that the computerized systems they operated performed quite appropriately. But often the major purpose for which computers are employed in libraries to significantly improve information service to the clientele is under achieved, especially in online setting because most staff are not computer literate.

Buckland (1991:10) and Rowley (2000:32) have lent their support to the advantages in automating library services. Buckland saw it from the point of view to enhanced circulation services while Rowley (2000) posited that computers have made services more receptive, even to otherwise recalcitrant non-user. Bourne (1981:99) in an article specifically concerned with East Africa, suggested that three alternatives existed regarding the improvement of information in the less developed countries. First, one can opt for maintaining the status quo; one may augment present local information services with computer-based reference services; and third, one can improve local collections in a conventional way. He went to state that the second alternative could provide greater service at lower cost. Bourne particularly observed that the less developed countries lacked bibliographic tool as well as resources and that any improvements must consider both information access and document delivery. For example, he said SDI services could be obtained and run on computers in the less developed countries. The advantages of information technology in public organizations to provide efficient and effective services are indispensable. To concur, Chiparausha and Sithole (2008:13) highlighted that electronic information services have a lot of benefits. First, E-journal articles and books are consistent and regularly. This is particularly interesting when an online version of a

print equipment is made available earlier whilst the print version is still 'in press'. This is an advantage to researchers who seek after current information. Secondly, electronic information resources is also associated with quite a number of search facilities making it relatively easier for one to search for the specific information she/he wants. As an example an ordinary Microsoft word documents or a document in portable document format has got a facility to search through making it quite easy to skip from one section to another in search of relevant information in that document. Thirdly, the option to make a print out of the soft copy makes electronic information resources highly portable. Fifthly, depending on the host, networking infrastructure and user access licensing, electronic information resources may be accessed by multiple users simultaneously, many journals publishers such as Emerald, Oxford University and Sage allow multiple users from one institution to log on to their databases simultaneously. Sixthly, some of the electronic information resources are available free of charge. Such information is said to be on 'Open Access'. One simple needs to have an internet connection. A typical example is the database known as the Directory of Open to Journals (DOJ).

2.14 Factors Influencing Information Resource Management in Public Organizations

There are number of factors that militated against the effective management of information resources in Public Organizations. Manda (2006:16) mentioned inadequate technological infrastructure to support the integration of ICT in the curricular. This refers to the issues as poor or lack of national ICT policy, low internet connectivity, inadequate supply of electricity, inadequate number of private computers etc. There is need for policies that deregulate satellite communication and other telecommunication links regulate government and cross-border data flows. ICT policies can help address stringent tax

regimes that still treat computers, communication equipment and other peripherals as luxury items, thus imposing heavy impact duties on them and subsequently rendering these items very expensive.

Information Resource Management is focused with the problem of information explosion. With the aid of ICT, there are multiple production of books, journals publications, thereby led to duplication of work in different part of the world. This has made selection of information resources for acquisition difficult for the management in most organization. Bibliographic control is essential in every nation in the world so as to check unnecessary duplication of published materials.

Cultural factors among others have been identified as inhibiting effective information dissemination. Jacob and Ebrahimpur (2000:19) identified what they referred to as most common cultural factors inhibiting effective information; to be lack of trust, different cultural backgrounds, vocabularies, frames of reference, task of time and meeting places, narrow idea of productive work, inappropriate incentive schemes that do not motivate sharing but rather focus on individuals, task of absorptive capacity in recipients and intolerance for mistake and need for help. Some of these factors have also been mentioned by Goh (2000:28) and they include lack of trust that inhibits sharing of information, frames of references that do not facilitate job rotation, and absence of visible rewards for sharing information resources. These authors also cited other factors as noted by various individual members such as their ability and motivation, characteristic of the social network, and extent of codification of information resources.

Argote and Ingram (2000:41) noted that when information is not codified, strong ties that allow repeated interaction to promote information acquisition and shorten project time and healthy information transfer are lacking. Zack (1999:21) considered the barrier to

transfer of information and thus emphasized the codification of information; characteristics of the technology of tools being transferred and the appropriateness of the information being transferred to the recipient are considered vital components that influence transfer. However, some studies, for example, Kinenyere (2007:28-41) found out that available information is not necessarily accessed and used by users. The availability of information does not mean actual use because the users may not be aware of the availability of such resources, they do not know how to access these resources, or do not know what the resources offer. To add, Johnstoon and McCormark 1996 in Manda and Nawe (2008:18) cited limited time and lack of effective information retrieval skills as factors affecting users' access to electronic information resources. Therefore a perceived lack of various resources, such as time, equipment, funding, training and insufficient information on software coupled with lack of knowledge and skills of staff, insufficient technical support and the risks associated with implementing innovations in teaching, particularly those using technologies were cited as the most prohibiting barriers to use of electronic information resources in organizations. It is with this regard that this study had pinpointed areas in which information resource management practices are influencing public organizations with a view to making corrections in areas that are lacking the proper information resource management practices and suggesting the appropriate factors that can enhance information resource management in public organizations.

REFERENCES

Adeniran, B . O (1984) "Computer in Librarianship in the 21st Century." A Case Study of Special Libraries.Abeokuta : A paper presented at NLA Conference, held from 16th19th March. At Abeokuta City Hotel Hall, Abeokuta. P. 4

Aderson (1999). "Information Management in the Information Age". ICCC/IFIP Conference, P. 14.

Afolabi, M. (1991). Introduction to Record and Record Management: Unpublished BLIS project, Department of Library and Information Science, Ahmadu Bello University, Zaria. P. 10, 12.

Aguolu, C.C. and Aguolu, I.E. (2002). Libraries and Information Management in Nigeria: Maiduguri, Information Services. P. 457.

Aguolu, I.E. (2002). "Accessibility of Information: A myth for Developing Countries? African Journal of Library Archives and Information Science. Vol. 4 (2) P. 34.

Ajibero, Odowole, A. et al (2002). Electronic Services Provisions in Nigeria University Libraries. Ney Library and Information Science Review. (NLISR) Vol. 20, P. 7.

Akinfemi, A.O. (1997). The Role of Information Management in Administration. A Text of Lecture Delivered to Organization Method Officers of the Western Nigeria, Ministry of Establishment and Training, Ibadan, Nigeria Pp. 1-16.

Akusah, H. (1996). Record Management in Ghana: An Overview of African Journals of Library and Information Science. Volume 6, P. 101-106.

Allen Lee (2005). MIS Quarterly, 25 (1). Retrieved Dec. 16th 2009 from HEEP://en.wikipedia.org/wiki/managementinformation system. P.8.

Apostolou, K and Menzas, T. (1999). The Management of Information from Achievers. London: Gower. P. 25

Argote, P and Ingram, S. (2000), The Use of Information Technology by Information Services. ASLIB-Information Technology Survey. London: Association of Information Management. P. 41

Argyris, C. (1991) An Organization Learning: 2nd Edition, Oxford Blackwall Science. P. 17.

Ayeni (2000). Information and Record Management: The Problem and Prospect. Spectrum Publishers, Lagos, Nigeria pp. 16, 18.

Azubuike, A. (1987). The Computer as Mask: The Phenomenon of Anonymous Services in Online System. Abeokuta. A Paper presented at NLA Conference from 16th – 19th March, Abeokuta City Hotel Hall, P.8.

Bell, D.H. (1982:15). Record Management Programme: Comprehensive Outline, Information Resource Management (IRM) Report, New York P. 18.

Bhatt, S in Hevey, C.T. (2001). The Age of Information Explosion. New Jersey: Educational Technology Publication. Englewood Cliffs. 18.

Blank, Mark M. and Ryan Kevin, M. (1999). "Information System Output Shortcoming and Suggestions". Journal of System Management. Vol. 21, P. 21, 25.

Boar, B.H. (1995). Information Technology and Business Alignment: a strategic assignment. Handbook of Business strategy. London: Fau-Iker Grey. P.20.

Bourne, A. (1981). Information Services in Development Countries: a case study of East Africa. Journal of American society for Information Science. Washington: John Wileysons. Vol. 32, No. 2, p. 99.

Brochner, D and Tonks, P. (2004).New Horizon in Information Retrieval and Dissemination. London: Library Association. P 27.

Buckland, M.K (1991). Information as a thing: School of Information Studies University of California. P. 10.

Burch, J.G. (1999). Information System: Theory and Practical: New York, John Willey. P. 13.

Burke, C.F. and Horton, F.W. (1998). A complete Guide to Discovering Cooperation Information Resources. Prentice Hall Publishing, USA p. 23.

Chapman, P. (2000). Guideline on Preservation and Conservation. Paris, FR UNESCO. P. 20.

Chiparausha, B. and Sithole, N. (2008). University Libraries in a Changing Environment: Experiences and the Way Forward in the New E-Learning Environment. Presentation at the Inaugural Africa University National e-learning symposium. African University. Mutane, Zimbabwe (February, 2008). P. 13.

Clement, D.W. (2002) "Preservation Policies". A Reading Guide to Preservation of Library Collection: London Library Association, London, Vol. 12, P. 18.

Cook, M. (1980). Library and Computer: Britter Work London. P. 18.

Cook, M. (1990). The management of Information from Library: Gower, London P. 21.

Cordey-Hayes and Gilbert, R. (1996).Information Management in Engineering Education. Isreal: Lehigh University p. 27.

Cronin, B. (1985). Information Management from Strategies to Action. London: ALIB. P.38

Curry, A. (2000). Canadian Library and Information Science Education. Trends and Issue Educ. For Infm. 18(4) 325.

Dauda, S. (1994). Management Information: Volume 1, Number 3, MacGrew Hill Series, New York. P. 20-25.

Davenport, J and Prusak, O. (1998).The Management of End Users Computing Status and Directions. Network: ASLIB Information Department. P. 9.

Davies P. (2000) Computers System. London: Clive Bingley. P.32

Disraeli, P. (1965). Electronic Computers. Australia: Penguin Books Ltd. p.84

Dixon, N. M (1999).Organizational Learning a Review of the Literature with Implication for HRD Professional, Human Resource Development Quarterly P.31..

Drury, F.K.W. (2000). Order works for Libraries. 8th ed. Chicago. American Lib. Association. P.21.

Dunn, F.I. (2004). Security: A Guide for appraising and implementing security system. London: Society of Archivist. P.16.

Ebijuwa, A.A. (2005). Information and Telecommunication Technology in University Libraries. Journal of Library and Information Science. 7(1 & 2): P.23.

Edward and Finlan (2004). Successful Management and Information work: International Journal of Information Management P. 12.

Egbu, A and Jesse, J. (2003). Information Systems: Strategic Importance to users. London: London Information House. P.19.

Eliss, D. (1986) "Information Management and Information work" International Journal of Information Management Volume 6, (2), P.12.

Encyclopedia of Library and Information Technology for the 21st Century (2000) New Delhi, India: Annual Publication Ltd. Vol. 13, P. 22-23.

Evborokhai, A.O. (1991). The Librarian's Glossary of Terms Used in Librarianship and the Book Crafts and Reference Book: Andie Paulson, New York P. 13.

Feurie, I. and Bothma, G, (2006). Addressing the digital divide in teaching Information Retrieval. The electronic Library: 24(4) 469-89.

Frishammer, John (2002). "Characteristics in Information Processing Approaches, "International Journal of Information Management. Vol. 22, P. 24.

Gantz, John F. et al., (2008). "The Diverse and Exploding Digital Universe". International Data Corporation via EMC. http://www.emc.com/collateral/analystreport. P.12.

Goh, Y. (2000). Information Management in the 21st Century. London. Englewood Clifs, N.J. P.28.

Goldhor, H. (2003). Selection and Acquisition Procedures in Medium-Size and large libraries-3rd ed. Illin. Book Unwin. Chapman. P. 32.

Harrod, C.M. (1999. Library Glossary and Reference.

Harvey, R. (2005). Preservation in Libraries: A Reader Melborne, AUS: Bowker Saur. P. 25.

Henry, F. (1990). Information Systems. British Guernsey Press Co. Ltd. 5th ed. P.87.

Husey, D.E. (1990). Using Information Systems to Build Competitive Advantage and Copr with Change.Internal Review of Strategies.Washinton: Ozaer. T. John, Wiley & Sons p.10 International standardOrganization. P.10.

Jackson, I.H. (2001). Acquisition special materials. Seun Fransico. Bajj Region. Special Lib. Association. P.20.

Jacob, L and Ebrahimpur, I. (2000).Information Technology Era. Social Issues. London Hodderand Stougsty. P.19.

James, Robertson (2005). "10 Principles of Effective Information Management". Http//www//stepwo.com.au. P. 5 & 7.

John, F. (1991). Preservation and Management of Library Collection: Glecoe Press, London P. 21, 25.

Johnstoon and McCormark in Manda and Nawe (2008). The Impact of Electronic Information Resources use on Records output Experience from Universities in Tanzania, University of Dar es Salaam Library Journal, Vol. 10, No. 2, P. 16.

Karen Dutch (2001). Management Information: A Handbook for Management. London: Frees Press. 14.

Kinenyere, A.A. (2007**).** The effect of information Literary on the utilization of Electronic Resources in Selected Academic Research Institutions in Uganda. The Electronic Library, Vol. 25 No. 3 P. 28-41.

Kumbar, M. (Dr.), Rao, R.V. and Nargund, I.N. (2000) in Vuaykumar, J.K. and DAS, Manju: (1) Rom to DVD-Rom: a new era in electronic publishing of databases and multimedia reference source. ASLIC Bulletin Vol. 45, No. 2. P. 23, 50.

Leslie, Kish (2001) Survey Sampling. 4th ed. London: Arrowsmith. P. 67.

Ling, Ted (1998) Solid, Safe, Secure: Building Archives Repositories. Dickson, ACT National Archiving and Australia. P.18.

Lucas (1999). Successful Management Information System UIMI, Ibadan: Coleman. P. 23.

Lucy, Terry (2000). Management Information System, 5th Edition; Winchester; ELBS Press. P. 49.

Madu, Eaverest C. (2004). Technology for Information Management and Service. Ibadan: Coleman. P. 10.

Manda, P. and Nawe, J. (2008). The Impact of electronic information resources use on research output; Experiences from Universities in Tanzania, University of Dar es Salaam Library Journal, Vol. 10, No 1 and 2.

Mandaa, P.A. (2006). State of ICTS in LIS Curriculum in Tanzania. A Paper presented at IFLA workshop on integrating ICTs in US curriculum in Africa. Windhock. Namibia. P.16.

Mantistino, Shannon (2002). Information, Organization and Management Retrieval on 18 December, 2009, from http:/en.wikipedia.org/wiki/information management, P. 11.

March and Simon (2008). Information Management System. Retrieved November 15, 2008. From http://www//.information management P. 13.

Merrilin, Nancy (2006). Implementing Preservation Management Ottawa, ON. Reseau Des Archives du Quebe. P. 8.

Mintzberg, G. (1973). The Nature of Managerial Work. London: Harper and Row. P. 13.

Mohammed, Z. (2005). Information Management in Public and Business Oriented Establishment. Nigeria Institute of Management journal vol. 40. P.24.

National Institutes of Standards and Technology Act 15, US Code (2014) New York: Eaglewood Cliff. Archives Management 2nd Edition. 4-9

Penn, I.A. (2000). Record Management Handbook: USA, Ashgate, P. 20-24.

Penn, I.A. et al (2000). Records Management Handbook. USA: Ashgate P. 20.

Probst, J and Williams, J. (2005).The Management of Information Resources. London: Gower. P.15

Quadri G.O. (2012). Impact of ICT Skills on the use of E-Resources by Information Professionals, http://un//ib.un/.edu/lpp/ P.19.

Robinson, R and James, P. (2004).Managing the Flow of Information in Organizations. London: Boston MIT Press P. 18.

Roth, A. (2001). The Age of Information Explosion. New Jersey: Educational Technology Publication. Englewood Cliffs P.96.

Rowley, J. (2005)."Towards a Frame Work for Information Management" International Journal of Information Management vol. 18. P.5. P.5.

Russell, D.E. (1974). Information Management: An Introduction in Special Libraries. Volume 65, Oxford University Press London. P. 16, 18.

Salami, K.A. (2006). A Textbook on Library and Library Information Science. Zama. Misons Press. P. 19.

Schellenberg, C. (1995). Modern Library Principles Techniques: University of Chicago Press. USA P. 11.

Schwartz (2003). Information: "The Unscare Resources" in Nation Wide Provision and Use of Information (ASLIB). USA: LA Joint Conference, London: Vol. 5, P. 30.

Scott, M. G (1996). Principles of Manage Information System. Macgrew- Hill Series in Management Information System.New York P. 97.

Seppecassetari (1999). Introduction to Integrated Geo-information Management. London: Capman. P.15.

Sharon, M and Williams, J.B. (1995). How Managers get the Information they Really Need. United Kingdom: The Information Mosaci. P. 18.

Shoneyman, A.H. (1995). Organizing Information Resources. Information Management review: UK, vol. 45, P.35.

Suffon, S.A. (2001). Trends, trends projections and Crystal ball gazins. Journal of Educ. For Lib. and Information Science. 42(3) P. 241.

Sverlinger, M. (2000).Information on Sources for Managers. Management Decision. London: University Press. P. 27.

Takeuchi, H. and Nonaka1. (1995).The Knowledge Creating Company: How Japanese Companies Create the Dynamics of Innovation, New York; Oxford University Press England John Wiley and Sons Ltd. P.23.

Tamber, M.F. (2004). Technical Services in Libraries. 5th Ed. New York. Columbia University Press. P. 15.

Tedd, L. (1981). An Introduction to computer based library Systems. London: Heiyien. P. 28.

Trinkans-Randall, G. (1995). Protecting your Collections. Chicago, IR., Society of American Archivists. P. 28.

Unuigbe, E.O. (1990). The future of Record Management in Nigeria: Journal of Society of Nigeria Archive. Volume 2, P. 26, 33.

Vickers, P. (1987). Information Management and Competitive Success. London: ASLIB. P.37.

Vito, A. (1999), Knowledge Transfer and Inter-firm Relationship in Industrial Districts: the Role of the Leadership Firm, Technovation, P.19.

Wali, Muazu H. (1999). "Library and Information Education for National Information Management". In Edoka and Dike VW. Education for National Information Management. Nsukka: NALISE Proceedings. Department of Library Science. University of Nigeria. http//www.google.com.nalise//nsukka. P.8.

Welchi, H.M. (2006). Acquisition of Information Resources. New York. Mercal Dekker. P.19,27.

Whitehead, J. (1987). Information Management and Comparative Success. London LIB. P.20.

Williams, J.L. Channareeraiah I. (2008). From automation to transformation: International CALIBTR held at Allahabad. 28-29. March. P. 19.

Wilson, R.M.S. (1982). Management Controls and Marketing Planning. London: The Institute of Marketing and the C Foundation. P. 45.

Woodman, S. (1985). Information Management: From Strategies to Action. London: ASLIB .p 98.

Wulfekoetter, G. (2001). Acquisition Works: Processes Involved in Building Library Collections. Seatle, University of Washington Press. P.27.

CHAPTER THREE

RESERCH METHODOLOGY

3.1 Introduction

The purpose of this chapter is to describe the method and procedure adopted for conducting the investigation on Information Resource Management in the Ministry of Petroleum Resources (MPR). This chapter is organized according to the following sub-heading: Research Method Adopted, Population of the Study, Sample Size, Sampling Technique, Instruments for Collecting Data, Procedure for Data Collection, and Procedure for Data Analysis.

3.2 Research Method Adopted

The study focused on Information Resource Management which deals with information resource generation, inputting/processing, storage, retrieval and dissemination in the MPR. In order to obtain relevant data, the research method adopted for the study was a survey method. According to Afolabi (1993:12), the method is often used to study large and small populations using the questionnaire instrument, and for large populations, the use of sample is permissible. The finding obtained from the sample is generalized to the large population. In this study a survey method was adopted to carry out the study in various departments of the Ministry of Petroleum Resources, using the proportionate sampling technique so as to facilitate the collection of information easily.

To carry out this study the purposive sampling technique was adopted in which a sample size of 260 staff were drawn from a population of 800 based on Morgan (1970:99) recommendation table of population and suitable sample size. The two hundred and sixty respondents were choosen from the top management staff down to the middle and junior

executive cadre. The instrument of the study was the questionnaire. The questionnaire was designed by the researcher and results obtained from the questionnaires distributed were analyzed using their raw scores and percentages. They were also represented on tables and graphs. The Statistical Package for Social Science (SPSS) was used for the analysis, as recommended by Norman (2009:20) for a study of this kind.

3.3 Population of the Study

The population of the study is eight hundred (800) staff of the Ministry of Petroleum Resources, Abuja. The top management staff down to staff of middle and junior executive cadres was the population of the study. The composition of the population include the Permanent Secretary, Directors, Deputy Directors, Assistant Directors, Librarians, Engineers, ICT staff, computer Analyst and Programmers, Statisticians, Information officers, Secretaries, Monitoring and Evaluation staff, Project Officers, Administration and Executive Officers.

Table 3.1: The Population of the MPR Staff in Various Departments

S/No.	Department	Population
1.	Permanent Secretary	25
2.	Planning, Research and Statistics	251
3	Human Resource Management	216
4	Department of Finance and Account	104
5	Oil and Gas and Special Duties	74
6	Procurement and supplies	72
7	Legal Department	21
	Information and Press	32
	Total	**800**

3.4 Sample Size

A sample size is a subset or small group of subjects drawn procedurally to represent the relevant attributes of the large population. Rudolph (2002:25), defined "a sample size as proportion of an entity or a subset which essentially must be a representative as possible of the entire population." A portion of the staff in the MPR was drawn purposively to form the sample of this study. To ensure the selection of a representative sample, the sample was drawn from staff of top management down to middle and junior executive cadre.

The sample size drawn from the larger population in the MPR consisted of two hundred and sixty (260%) staff selected randomly as follows: 30.3% of staff from the Department of Planning, Research and Statistics; 32.40% of staff from the Department of Human Resource Management; 30.8% of Staff from the Department of Finance and Accounts; 33.3% of staff from the Department of Oil and Gas and special duties; 33.3% of staff from the Department of Procurement and supplies; 33.3% of staff from Legal Department; 46.9% staff from Press Unit and Information Department who work directly with information and ICT and lastly, 40% was drawn from the permanent secretary's office. These groups consisted of the protocol officers, secretaries, press officers, information officers, clerical staff, computer programmers, operators, processors and computer analyst. The entire groups were involved in order to get a comprehensive result. Moreover, the two hundred and sixty staff selected from the eight hundred staff of the MPR population is in accordance with Morgan (1970:99) sample size and population determining table.

Table 3.2: The Sample Size Selected From the Population of the MPR

S/No.	Departments	Population	Sample selected	Percentage
1.	Planning Research and Statistics	251	76	30.3
2.	Permanent Secretary's Officer	25	10	40
3	Human Resource Management	216	70	32.40
4	Department of Finance and Account	104	32	30.8
5	Oil and Gas & Special Duties	74	24	33.3
6	Legal Department	21	7	33.3
7	D. Procurement & Supplies	72	24	33.3
8.	Information and Press Department	32	15	46.9
	Total	**800**	**260**	**32.5**

3.5 Sampling Techniques

The proportionate sampling technique was used so that result obtained from the sampled size was generalized to the bigger entity. The reason for adopting proportionate sampling is to ensure enough and fair representation of the entire population and to enable the researcher collect accurate information from the subjects of the study.

The unit in the population from where the samples were drawn was identified as a true reflection of the population. The sample frame used was the list of the staff identified to hold key offices in the MPR, which in this case is represented by a total number of two hundred and sixty staff. Morgan *et al.* (1970:99) opined that if the population of an organization is 800,260 is suitable for its sample size.

3.6 Instruments for Data Collection

The instrument used for data collection was the questionnaire. The questionnaire was carefully designed so as to elicit the necessary information from the subjects. The questionnaire was constructed in such a way that it was easy to answer and also get reliable and accurate information. Bello and Ajayi (2000: 15) stated that "a good questionnaire is a series of relevant questions which are used to elicit information from the target population of a given study". The questionnaire was divided into 7 sections:

A - Designation;

B - Types of Library/Information Centre and information Resources Generated in the MPR;

C - How Information Resources is processed in the MPR

D - Information Resources Management and ICT in the MPR

E - Personnel/Officers involved in IRM in the MPR

F - Facilities used for the Protection, Security and Preservation of IR in the MPR

G - Factors Militating against IRM and Factors Suggested to Improve IRM in the MPR.

Section A constituted the designation/rank of officers; section B examined the type of Library/Information Centre and information resources generated in the MPR; this covered the methods used to generate information resources in the organization, and information resource processing techniques; section C covered how information resources were processed in the MPR, the section identified the methods used for the inputting, storing, retrieving and dissemination of information resources in the organization. Section D Information Resource Management and ICT in the MPR, this involves how ICT made an

impact on Information Resource Management in terms of enhancement on staff activities and productivity. Section E examined the personnel/officers involved in IRM in the MPR in respect of their qualifications, adequacy and training opportunities. Section F dealt with facilities used for the protection, security and preservation of information resources in the MPR. Finally, section G examined the factors that militated against effective information resource and factors suggested to improve IRM in the MPR.

The questionnaire covered the information resources generation, uses and areas of difficulty in receiving the information, it also included the information resource management and ICT used in managing information resources at the MPR, Personnel/Officers involved in IRM the procedures adopted in inputting/processing, storing, retrieving and disseminating information. Also questions regarding the strategies used for the protection, security and preservation of information, factors that aided information resource management and factors that militated against information resource management in the MPR.

3.7 Procedure for Data Collection

For this study, data were collected personally by the researcher. Two hundred and sixty (260) copies of the research questionnaire were administered to the subjects of the study but two hundred and fifty (250) copies were recovered for data analysis. It took the researcher a period of three months to follow up the clients in order to collect the questionnaires. The reason for the delay was due to lukwarmness and unserious attitude of some of the subjects of the study.

3.8 Data Presentation, Analysis and Interpretation

Data analysis was conducted by subjecting the collected data to Norman (2009: 20) "Statistical Package for Social Sciences (SPSS)."

The data collected were analyzed using percentages and reported descriptively and designed in such a way that every research question was addressed by using the raw scores and their equivalent percentages. It was also presented on pie chart, graphically and on tables.

REFERENCES

Afolabi, M. (1993). Introduction to Research Method for Writing Proposals Projects and Thesis. Ahmadu Bello University, Zaria P. 12.

Bello, R. and Ajayi O. S. (2000) Research Methods and Statistical Analysis. Ilorin: Haytee Press Publishing company Limited P. 15

Morgan, D.W. (1970). Small-Sample Technique. The NEA Research Bulletin Educational and Psychological Measurement. Vol. 38, P. 99.

Norman N. (2009). Statistical Package for the Social Sciences (SPSS), 17th Edition P. 20

Rudolph, J and Rummel (2002).Research Methodology for Nigeria Educators. 1st Edition: Ibadan: University Press. P. 25.

CHAPTER FOUR

DATA PRESENTATION AND ANALYSIS

4.1 Introduction

The data collected from the respondents involved in this study were statistically analyzed in this chapter using raw scores, percentage and represented on a pie chart and on a graph. The methodology used was the survey method and descriptive approach was used in the analysis. The chapter is structured into sections in line with the research questions and objectives. In the first section, the types of information resources being generated in the Ministry of Petroleum Resources were analyzed. In the subsequent sections, the opinions of the respondents on the effects of Information and Communication Technology available for information resource management in the organization were discussed; how Information Resource Management enhanced staff activities and productivity was analysed too, Personnel/Officers involved in IRM was also discussed, strategies used for the protection, security and preservation of information resources and the factors that militated against effective information resource management in the organization were analyzed.

4.2 Type of Library/Information Centre Available in the Ministry of Petroleum Resources

This section answers the first research question and it presents the analyses on the type of Library/Information centre available in the Ministry of Petroleum Resources. This is shown on Table 4.2. The percentages for the positive affirmation are graphically represented in Figure 1.

Table 4.2 Type of Library/Information Centre Available in the Ministry of Petroleum Resources

Types of Library/Information Centre	Yes		No	
	Freq.	%	Freq.	%
Government Library	232	92.8	18	7.2
Information and press Unit	206	82.4	44	17.6
Special Library	197	78.8	53	21.2
Documentation and Reference Library	170	68.0	80	32.0
Standard Library (e-library)	57	22.8	193	77.2
Research and Information Centre	125	50.0	125	50.0

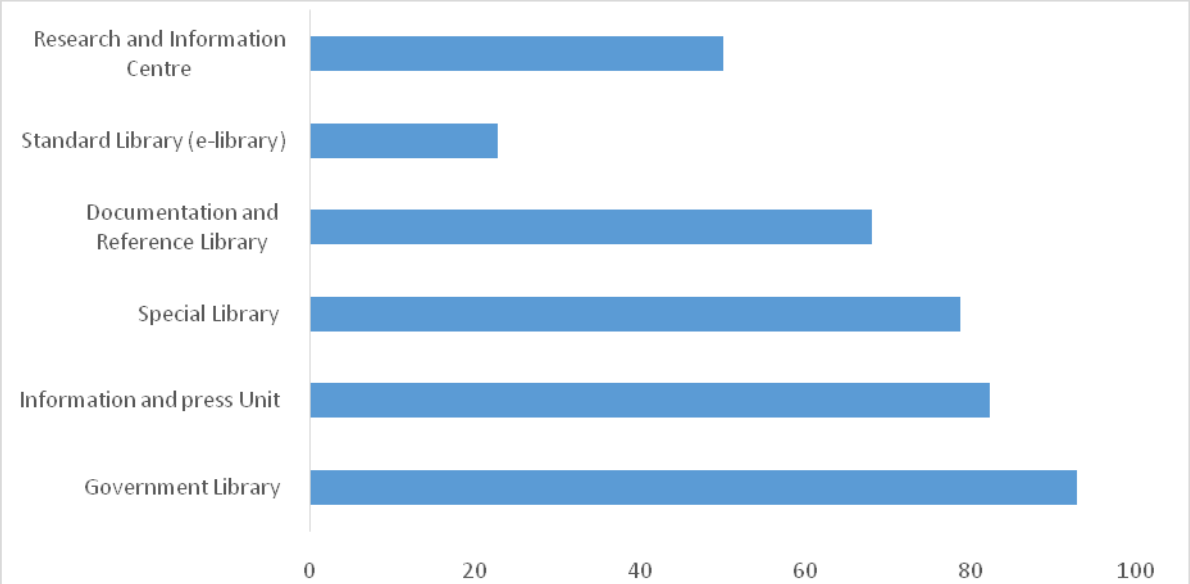


Fig. 1: Percentage opinions of the respondents on the types of information available in the Ministry of Petroleum Resources

The analysis on the type of Library/Information Centre available in the Ministry of Petroleum Resources revealed that the MPR operates a Government Library with (92.8%) of positive response from the subjects of the study. This was followed by Information and Press Unit with (82.4%) then special library (78.8%). (68.0%) of the respondents also refer to the library at MPR as a Document and Reference Library, (50.0%) referred to it as a research and information centre, lastly only (22.8%) of the respondents regarded it as a

standard library this was the least, indicating that a standard library has not been achieved at the MPR.

4.3 Type of Information Resources Generated in the MPR

The second objective of the study was to investigation of the type of information resources generated in the Ministry of Petroleum Resources, Abuja.

The respondents' perceptions on the types of information resources generated in the organization were scored in frequencies and percentages. The Table on the information resources is followed with a graphical illustration for proper understanding of the level at which each of the information resources was generated in the organization.

Table 4.3 Type of Information Resources Generated in the MPR

Type of Information Resources Generated in the MPR	Yes		No	
	Freq	%	Freq	%
Memoranda/Financial Information	172	68.8	78	31.2
Correspondence/Official Information	160	64.0	90	36.0
Technical Reports on Oil and Gas projects (field work)	232	92.8	18	7.2
Conference/Workshop/Seminar Proceedings	146	58.4	104	41.6
Statistical data of Oil producing states and countries (OPEC)	211	84.4	39	15.6
Newsletters on Petroleum related organizations	146	58.4	104	41.6
Photographs, Maps and Altlas of Oil Producing Countries	120	48.0	130	52.0
Journals/Bulletins on Petroleum matters	125	50.0	125	50.0
Magazines/Newspapers/Dailies	167	66.8	83	33.2
Monographs (books- print base and electronic base information resources)	179	71.6	71	28.4
Stakeholders report (PTDF, PTI, NNPC, DPR, PEF, PPPRA)	179	71.6	71	28.4

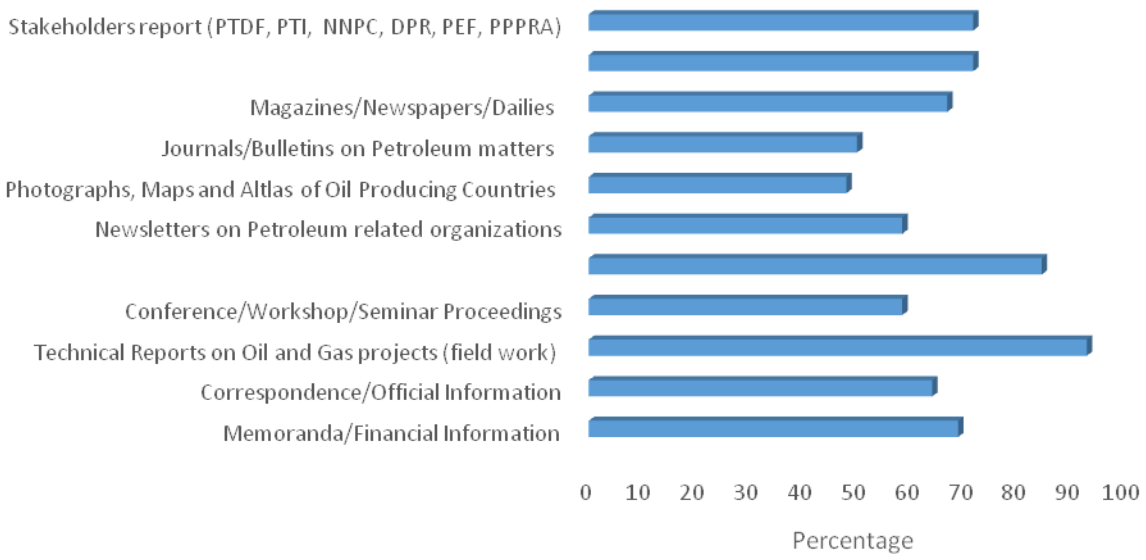


Fig. 2: Percentages of respondents' affirmation on the information resources generated in the Ministry of Petroleum Resources

Table 4.3 and figure 2 above presented the types of information resources generated in the MPR. Among all the options presented, Technical report on oil and gas project was the highest with (92.8%) of the respondents agreeing that it was the major source of information resource generation. This was followed by the statistical data of oil and gas producing states and countries (OPEC) with (84.4%) scores, next was two options scoring equally these are monographs (books-print base and electronic base information resources), and stakeholders report (PTDF, PTI, NNPC, DPR, PEF, PPPRA) both scored (71.6%) of the respondents viewed as ways information resources are generated in the MPR. Memoranda/Financial Information Scored (68.8%), magazines/newspapers/dailies had (66.8%), this was followed by correspondences/official information with (64%), followed by Conference/workshop/seminar proceedings and Newsletters on petroleum related organizations both scored equally with (58.4%). Journals/bulletins on petroleum matters scored (50%). Lastly, the least was photographs, maps and Atlas on oil producing countries of the world which scored (48%).

Generally, it was observed that all the mediums of IR generation in the MPR had a very high score, meaning the MPR has enough information resources for their activities, therefore this study is relevant to examine how IRM is performed in the MPR, and to provide useful information on how to improve on IRM.

4.4 Methods Used to Generate Information Resources in the MPR

A number of issues were examined in this section. In the first instance, the methods used for the generation of information in the organization were investigated using the information processing techniques. The different methods and devices for information resource generation such as memos and files, telephone, fax, computers and e-mail services including other conventional methods and technology were assessed in this section. The respondents' opinions on their availability in the organization are scored in frequencies and percentages. A graphical illustration of the magnitude with respect to their availability is presented in Figure 3 after Table 4.2:2.

Table 4.4 Methods Used to Generate Information Resources in the MPR

Methods Used for Generating Information Resources in the MPR	**Yes**		**No**	
	Freq	**%**	**Freq**	**%**
Memos and files	232	92.8	18	7.2
Use of telephones/Correspondences	135	54.0	115	46.0
Research and Statistical Data	170	68.0	80	32.0
Use of Fax	39	15.6	211	84.4
Computer Online Retrieval Devices	140	56.0	110	44.0
Workshop, Seminars and Conference Paper	130	52.0	120	48.0
Electronic Mails	70	28.0	180	72.0
Internet/Official Transactions	110	44.0	140	56.0
Sensitization Programs	100	40.0	150	60.0

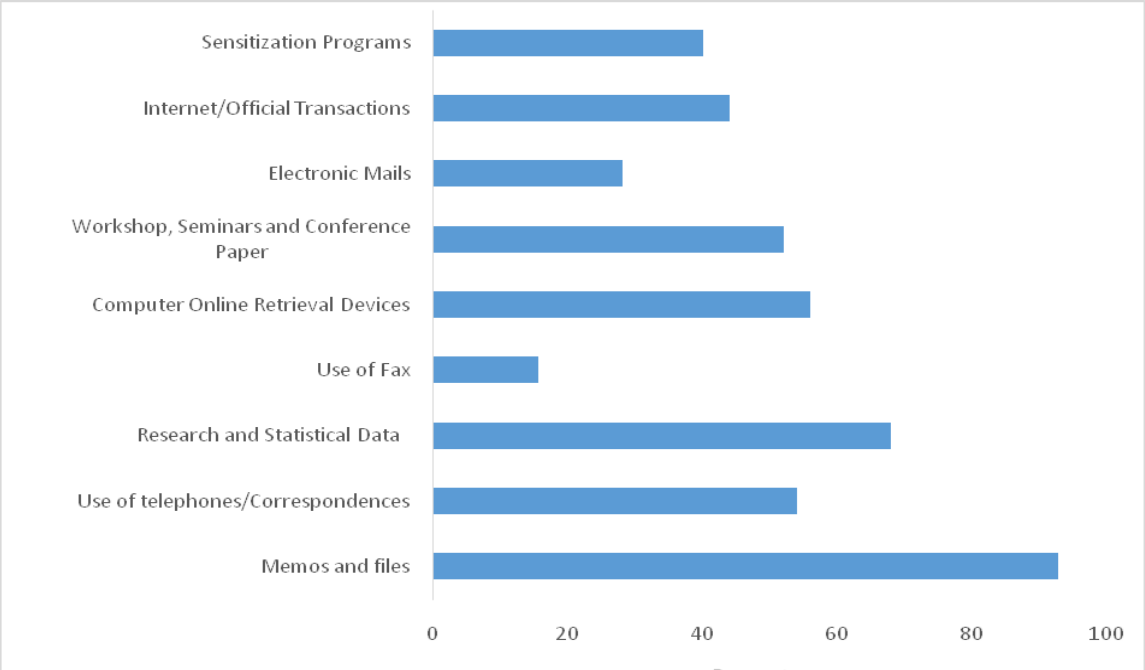


Fig. 3: Percentage afirmation by the respondents of the **methods used to generate information resources in the MPR**

On a hierarchical basis, memos and files were the most popular methods used for information resource generation in the organization, with 92.8% of the respondents view. Research and Statistical Data were second with 68.0% positive response. Of equal importance was computer online Retrieval Devices which was rated 56% as one of the technologies used for information resource generation in the organization. This was followed by the telephone and correspondences with 54%. Workshop, seminar and conference papers were other methods that received average with rating (52.0%). This was followed by internet/official transaction with 44.0%. Other technologies of less usage were: Sensitization programmes (40%) and Electronic mails (28%). The implication of these findings here is that the use of information and communication technology could not be said to have taken complete eminence in the management of information in the MPR. This observation could easily be deduced from the graphical illustrations of the respondents' agreement with the methods used for information generation in Figure 3.

4.5 Equipments Available for Information Resource Processing in the MPR

The opinions of the respondents on information resource processing equipments used in the organization are tabulated in Table 4.5 with a graphical illustration in Figure 4.

Table 4.5 Responses on Equipments available for Information Resource Processing in the MPR

The Equipments Available for information Resource Processing in the MPR	Yes		No	
	Freq	%	Freq	%
MPR Database/Databank	190	76.0	60	24.0
Computer (input and output)	125	50.0	125	50.0
Records and Documentation Register	120	48.0	130	52.0
Files/folders	120	48.0	130	52.0
Accession Register and Indexing/Abstracting Register	100	40.0	150	60.0
Telephone/Scanners/Fax machine	90	36.0	160	64.0

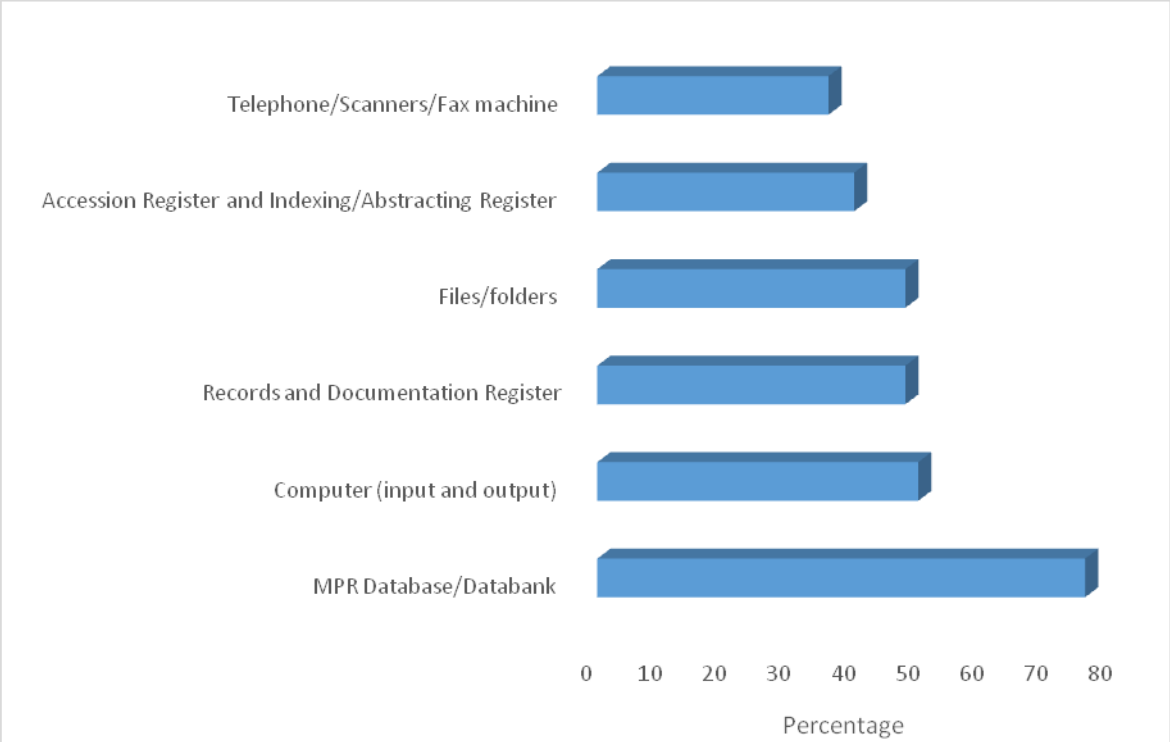


Fig. 4: Percentage of respondents' affirmation of equipments available for information resource processing in the Ministry of Petroleum Resources

From the analysis of equipments for information resource processing available in the MPR, MPR Database/Databank were the most rated and were scored (76.0%) of the total respondents. Next was computer (input and output) with (50.0%) positive responses. Records and document register, and files/folders had equal percentages with (48.0%) each. This was followed by Accession register and indexing and Abstracting Registers with (40.0%), lastly the telephone/scanners/fax machines with (36.0%).

4.6 Assessment of Information Resources Input/Processing, Storage, Retrieval and Dissemination in the MPR

This section identified the methods used to process (input), store, retrieve and disseminate information in the MPR. The items are analyzed one after the other.

4.6.1 Technology Used to Input Information Resources in the MPR

The respondents' opinions on the types of information technology available for processing/inputting of information resources in the MPR are tabulated in Table 4.6:1 with a graphical illustration in Figure 5.

Table 4.6.1: Responses on the Technology Used to Input Information Resources in the MPR

Technology for IR input in the MPR	Yes		No	
	Freq	%	Freq	%
Computer memory	197	78.8	53	21.2
Library Accessioning Register	156	62.4	94	37.6
Indexing and Abstracting Services	130	52.0	120	48.0
Videotex (CD/DVD/VCD) Backup Tapes	78	31.2	192	68.8
Optical Disc/Diskette and Magnetic Tapes	73	29.2	177	70.8
Microfilm, Macrofilm and Microfitch	36	14.4	214	85.6

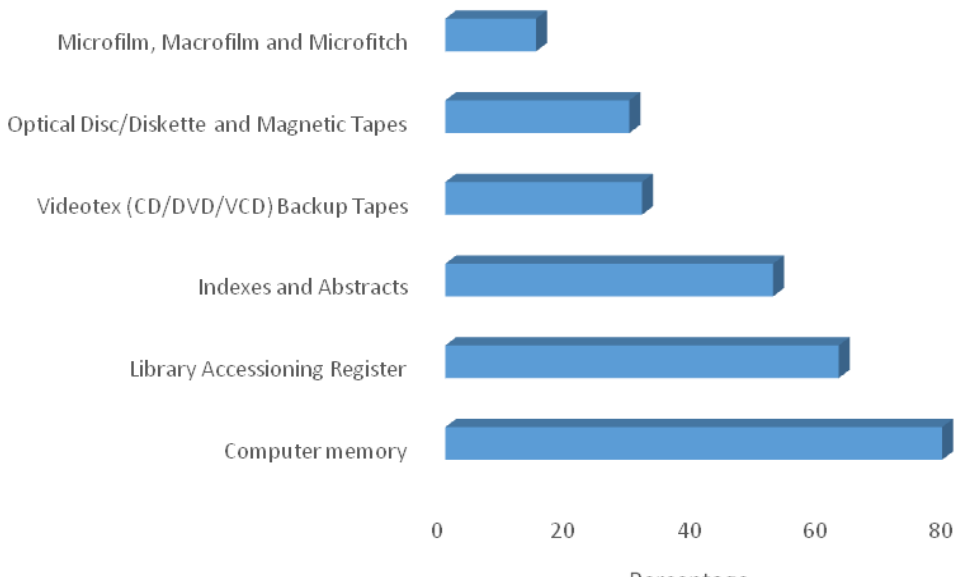


Fig.5: Percentage affirmation of the respondents on the technology used to input information resources in the Ministry of Petroleum Resources

One of the effective available technology for inputting/processing of information resources as scored in Table is 4.6.1 was computer memory with (78.8%) of the respondents agree as the most effective for inputting of information resources in the organization. Library Accessioning Register is next with (62.4%) and Indexing and Abstracting Services was rated as the third (52.0%) means of inputting information resources. Other technologies such as the videotext (CD/DVD/VCD) backup tapes had 31.2%, optical disc/diskette and magnetic tapes scored 29.2%, microfilm, macrofilm and microfiche were less available technology for inputting information resources in the MPR 14.4%. Figure 5 shows the graphical illustration.

4.6.2 Technologies Used for Storing Information Resources in the MPR

Apart from information resource inputting, certain technologies are required for the storage of such information in the MPR. In Table 4.6:2 and graph figure 6 the opinions of

the respondents on the available technologies for information resources storage in the organization are presented as follows:

Table 4.6.2 Responses on the Technology Used for Information Resource Storage Available in the MPR

Technology for Information Resource Storage in the Organization	Yes		NO	
	Freq	%	Freq	%
Computer Memory/Data Bank	211	84.4	71	28.4
Files, Folders & Filling Cabinets	179	71.6	39	15.6
Library shelves	109	43.6	141	56.4
Back up tapes/video text (CD/DVD/VCD)	100	40.0	150	60.0
Audio and video tapes	88	35.2	162	64.8
Optical Disks, Diskette and Disc	78	31.2	192	68.8
Microfilm, Macro Film, Microfitche	49	19.6	201	8.4
Slides/Umatic Tapes	57	22.8	193	77.2
Desk Drawer	31	12.4	219	84.6
Magnetic tapes	47	18.8	203	81.2

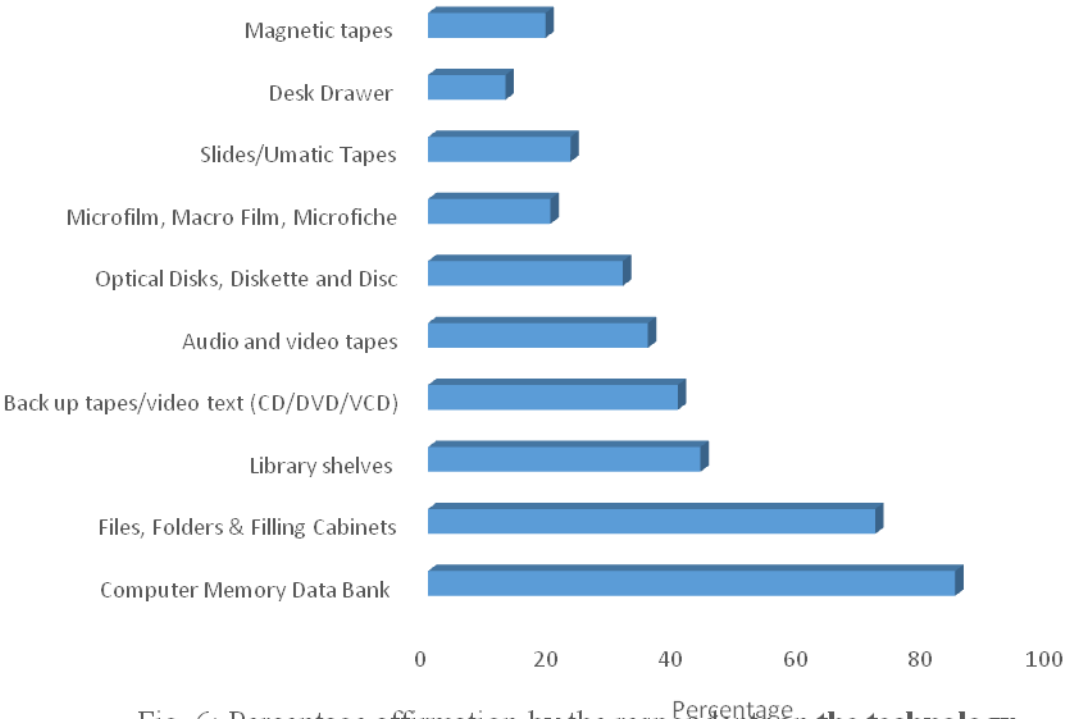


Fig. 6: Percentage affirmation by the respondents on **the technology used for information resource storage available in the Ministry of Petroleum Resources**

Table 4.6:2 and Figure 6 above have shown that Computer Memory/Data Bank constituted the major storage devices used for information resources in the MPR. From the Table, (84.4%) of the respondents were of the opinion that it was the dominant storage devices in the organization. Closely followed is the File folders and filling cabinet with (71.6%) of the respondents agreeing as storage devices in the organization. Others listed in the Table like library shelves (43.6%). The backup tapes/videotext (CD/DVD/VCD) had (40%) as information resource storage devices.

Others used for information resource storage are Audio and Video tapes (35.2%), optical disks, diskette and disc (31.2%), microfilm, microfilm, microfiche (19.6%), slides/umati tapes (22.8%), desk drawer (12.4%) and magnetic tapes (18.8%).

4.6.3 Technology Used for Retrieving Information Resources in the MPR

The findings here showed certain technologies used for retrieving of information as shown on Table 4.6:3 and Figure 7.

Table 4.6.3 Opinions of the Respondents on the Technology Used for Information Resource Retrieval in the MPR

Technology for Information Resource Retrieval in MPR	Yes		No	
	Freq	%	Freq	%
Computer memory	175	70.0	75	30.0
Manual from Files/Folders and Filling Cabinet	198	79.2	52	20.8
Backup Tapes /videotext (CD/DVD/VCD)	104	41.6	146	58.4
Online Retrieval Devices/Internet	107	42.8	143	57.2
Audio and Video Tapes, Magnetic Tapes	73	29.2	177	70.8
Indexes and abstracts	75	30.0	175	70.0

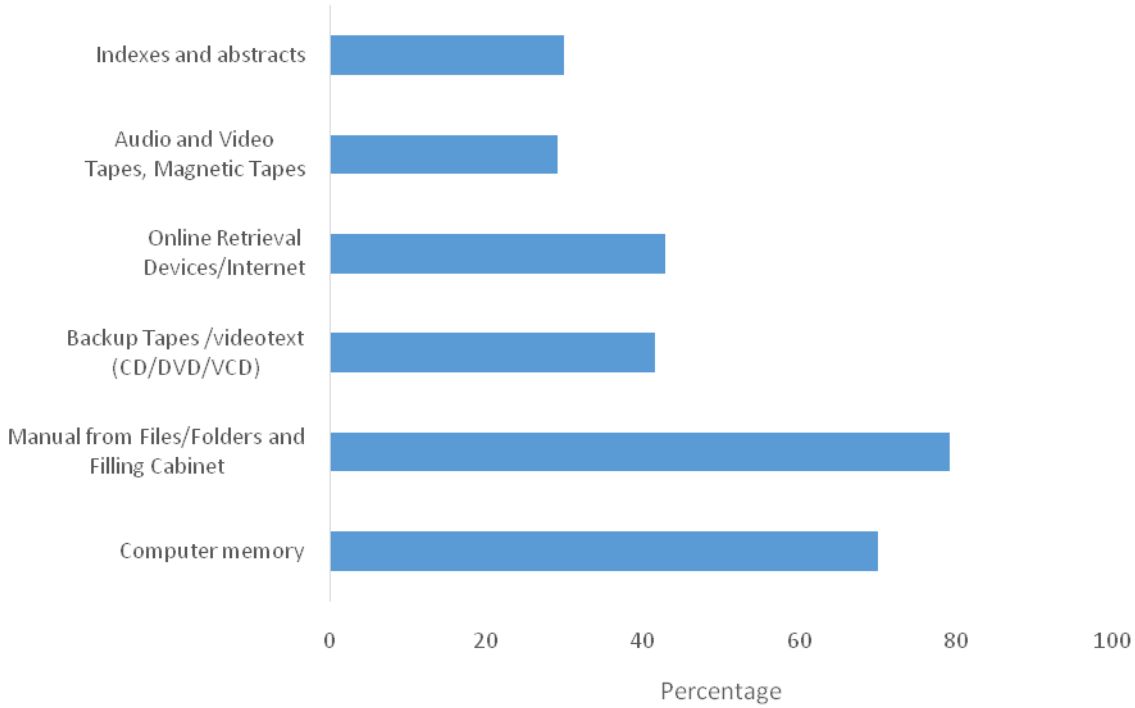


Fig. 7: Percentage affirmation of the respondents on the the technology used for information resource retrieval in the Ministry of Petroleum Resources

Like the devices for information resource storage, manuals from files and folders and filing cabinets accounted for (79.2%) for devices used for information resources retrieval in the organization. The use of computer memory (70%) Backup tapes /videotext (CD/DVD/VCD) (41.6%) and online retrieval devices/Internet devices accounted for (42.8%). Other retrieval devices like audio and video tapes are magnetic tapes scored (29.2%) and indexes and abstracts (30%) respectively.

4.6.4 Methods Used for the Dissemination of Information Resources in the MPR

The last variable in this section was the identification of the information technology for the dissemination of information resources in the organization. The opinions of the respondents on the available technology for information resource dissemination in the organization are presented in frequencies and percentages in Table 4.6:4 and are graphically illustrated in Figure 8.

Table 4.6.4 Responses on the Methods Used for Information Resource Dissemination in the MPR

Methods for Information Resource Dissemination in MPR	Yes		No	
	Freq	%	Freq	%
Movement of files and folders/display on notice board	206	82.4	44	17.6
Computer printout/online retrieval system	156	62.4	94	37.6
Telephone, internet/e-mail	141	56.4	109	43.6
Facsimile transmission/videotext	60	24.0	190	76.0
Selective Dissemination of Information, diskette, disc, microfilm, macro film and microfiche	57	22.8	193	77.2
Electronic surveillance	52	20.8	198	79.2

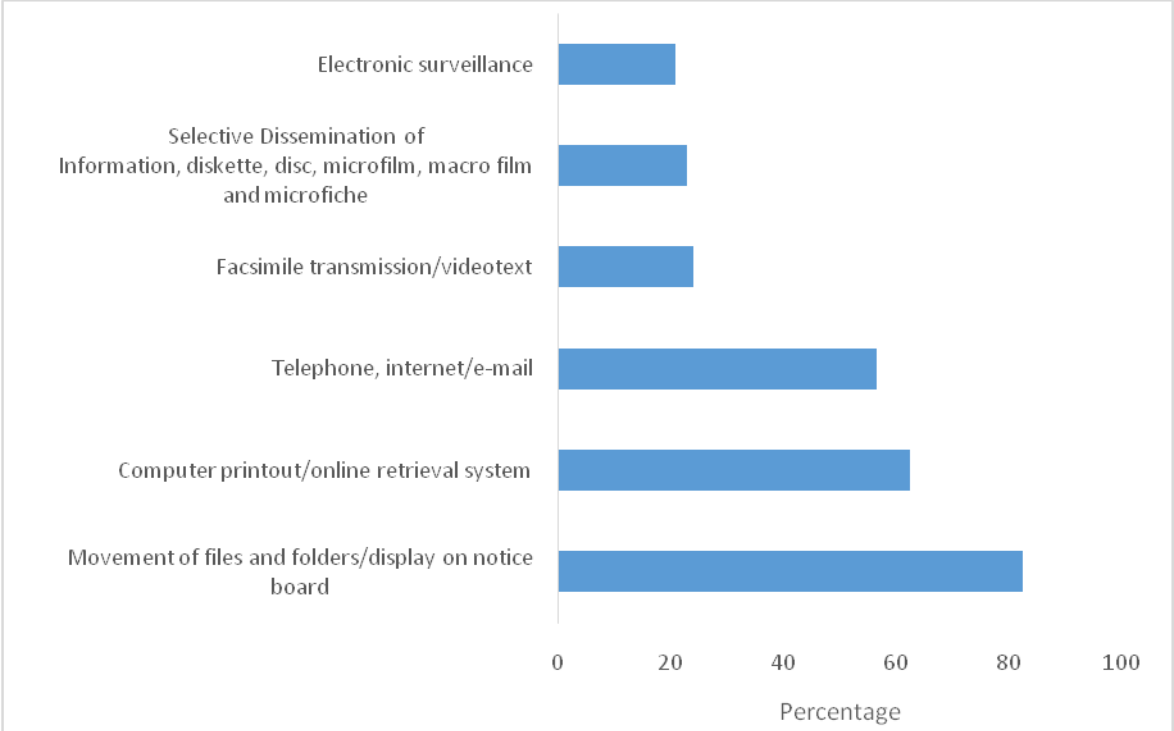


Fig. 8: Percentage affirmation of the respondents on the methods used for information resource dissemination in the Ministry of Petroleum Resources

The expressed opinions of the respondent for information technology available for dissemination of information resources in the MPR as indicated by the percentage scores and the figure all pointed at files and folders/display on notice board as the most available in the organization with (82.4%) Computer printout/online retrieval system was the

second with (62.4%). The telephone and Internet with e-mail technology were next rated with (56.4%) of the respondents view. Others means for information dissemination in the organization were facsimile transmission/videotext scored 24%, Selective Dissemination of Information, diskette, disc, microfilm, macro film and microfiche scored 22.8% and electronic surveillance accounted for 20.8%.

Figure 8 clearly showed the dominance of the files and folders and computer services in the dissemination of information resources in the MPR. In concluding, it could be said that the file and folders system incorporated with memos and such correspondence are the most available information technology used for dissemination in the Ministry of Petroleum Resources. The findings is also in line with Probst and Williams (2000) where information resource management is viewed in line with a process-oriented approach and more or less involved the processes of information acquisition, dissemination, making meaning, organizational memory and retrieval.

4.7 Effects of Information and Communication Technology (ICT) on Information Resource Management in the MPR

The investigation centered on the impact of the ICT on the staff towards the enhancement of their tasks in the MPR. This takes into account the time for information retrieval, Selective Dissemination of Information, improvement in decision making; resulting from effective management of information resources and efficiency in information storage among others. The assessment was considered in three dimensions. These included the opinions of the respondents on the effect of the ICT in the processes of information usage, the enhancement achieved as a result of the effective management of information resources and the accessibility to information resources from effective management in the organization. Each of the three variables is considered separately in Tables 4.7, and with the graphical illustrations in Figure 9.

Table 4.7 Effects of Information and CommunicationTechnology on Information Resource Management in the Organization

Effects of Information and Communication Technology on Information Resource Management MPR	Yes		No	
	Freq	%	Freq	%
Retrieval and dissemination of information resources	135	54.0	115	46.0
Selective Dissemination of Information Resources	112	44.8	138	55.2
Ease time Spent in Carrying out Activities and Programs	130	52.0	120	48.0
Improved decision making by management staff in the MPR	130	52.0	120	48.0
Sorting out Relevant Information Resources by Information Personnel/Officers for the MPR Management	130	52.0	120	48.0
Storage and security of Relevant Information Resources in the MPR	141	56.4	109	43.6
Quick interaction with stakeholders of the MPR	112	44.8	138	55.2

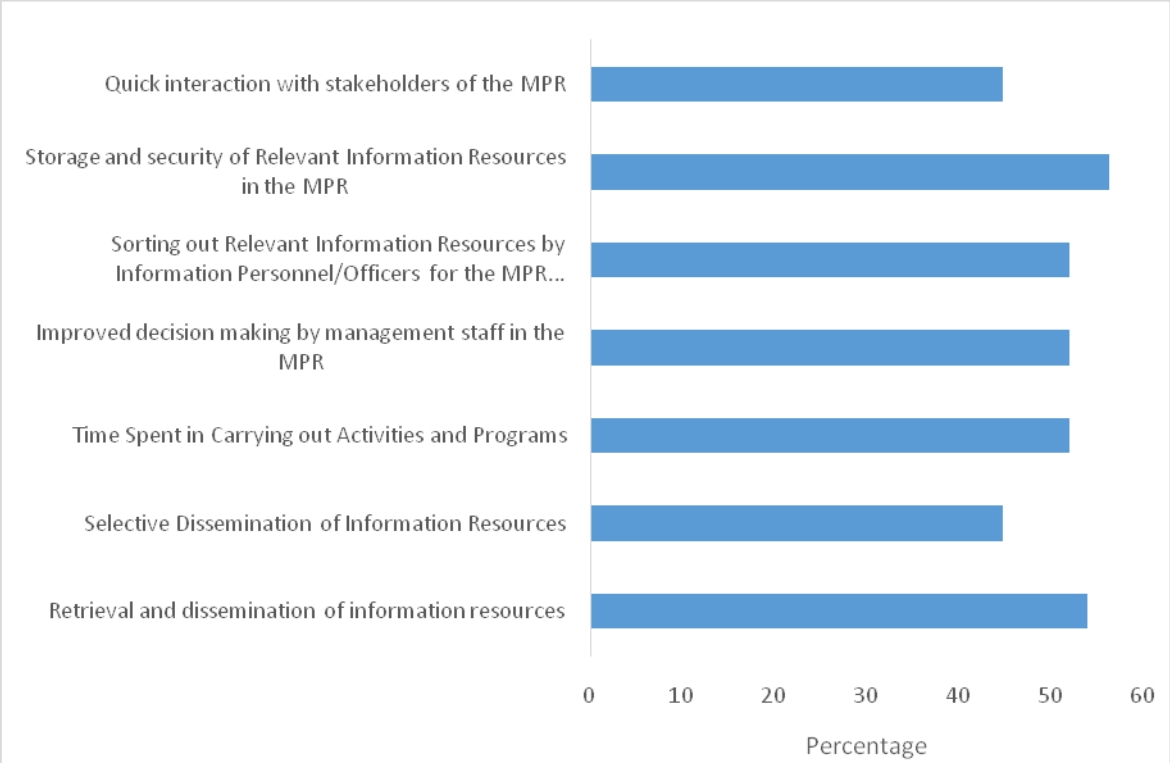


Fig. 9: Percentage affirmation by the respondents on **on information resource management in the Organization**

The respondents were unanimous on the benefit obtained from the use of the Information and Communication Technology (ICT) available for information resource management in the organization. They were more emphatic on the benefit it provided them in terms of storage and security aspects. Table 4.7 and on figure 9 revealed that, (56.4%) of the respondents acknowledged Information and Communication Technology enabled appropriate storage and security of relevant information resources in the organization. In the same perspective, 54.0% respectively acknowledged that it assisted them in retrieval and dissemination of information resources. Three options scored equal percentage with (52.0%) each, these are (1) ICT ease time spent in carrying out activities and programs; (2) It also helps in sorting out relevant information resources by information personnel/officers for the MPR; (3) It improved decision making by management staff because quick information are readily available due to the information resource management. On the same note, two options had equal percentages with (44.8%). The respondent were of the opinion that ICT assisted the achievement of information resource management in the MPR through Selective Dissemination of Information and quick interaction with stakeholders of the MPR respectively and both options had (44.8%) each. Though the last two were relatively lower in their percentage rating, but they could be seen as equally high as indicated in Figure 9.

4.8 Assessment of How the Use of ICT on Information Resource Management Enhanced Staff Activities and Productivity in the MPR.

Areas considered to have been more enhanced by improved management of information resources resulting from the use of improved Information and Communication Technology are time spent for information retrieval, management of data bases, decision making, sharing of information within and outside and collaboration in activities involving the personnel and stake holders of the organization.

Table 4.8 How the Use of ICT for Information Resources Management Enhances Staff Activities and Productivity in the MPR

How ICT Usage on IRM Enhances Staff Activities and Productivity in the Organization	Yes		No	
	Freq	%	Freq	%
IRM enhances collaborative activities with stakeholders(DPR, PTDF, PEF, NNPC, PTI, PPPRA)	108	43.2	142	56.8
IRM enhances technology knowledge sharing program (TKSP) with other organizations	115	46.0	135	54.0
IRM enhances decision making for management	146	58.4	104	41.6
IRM improves database management	162	64.8	88	35.2
IRM facilitates speedy retrieval of relevant information by MPR staff	167	66.8	83	33.2

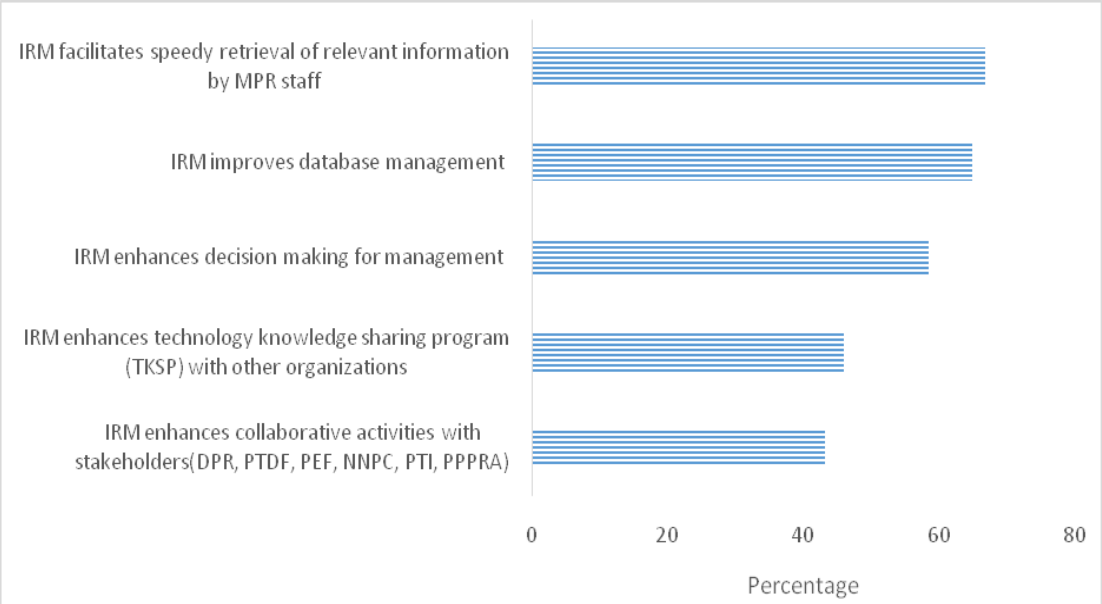


Fig.10: Percentage affirmation of the enhancement of ICT use on **Staff activities and productivity in the Ministry of Petroleum Resources**

In the Table 4.8 as well as Figure 10, (66.8%) of the respondents were of the view that effective management of information resources through the use of ICT facilitated a speedy retrieval of relevant information resources by the organization's staff while (64.8%) of the respondents agreed that it improved database management.

Furthermore (58.4%) of the respondents were of the opinion that it enhanced decision making for management in the MPR and (46.0%) indicated that improved

information resource management enhanced technology knowledge sharing program (TKSP) with other organizations, while (43.2%) acknowledge that it enhanced collaborative activities with stakeholders (DPR, NNPC, PTI, PEF, PTDF,PPPRA)

4.9 Types of ICT Facilities Available for Information Resource Management in the MPR

The findings here presented Table 4.9 and Figure 11showing the types of ICT facilities available for IRM in the MPR.

Table 4.9 Types of Information and Communication Technology Facilities Available for Information Resource Management in the MPR

Information and Communication Technology facilities available for IRM in the MPR	Yes		No	
	Freq	%	Freq	%
Local area network(LAN)/Intranet	162	64.8	88	35.2
E-library, E-document	96	38.4	154	61.6
Website/ Computer services	104	41.6	146	58.4
Internet services(e-mails, g-mail, face book)	164	65.6	86	34.4

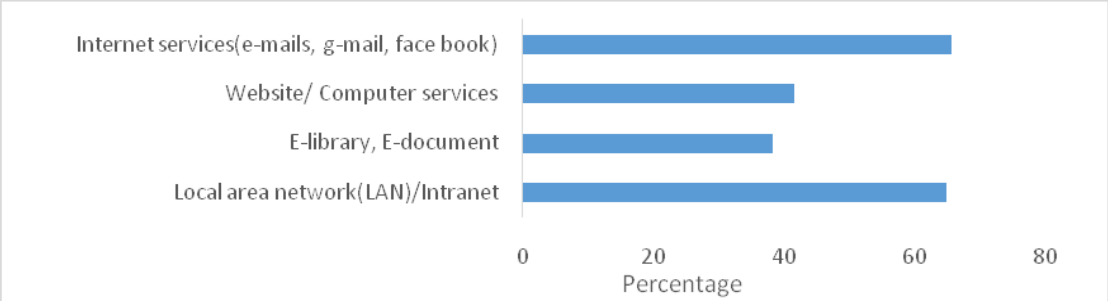


Fig. 11: Percentage affirmation by the respondents on **types of Information and Communication Technology Facilities Available for Information Resource Management in the MPR**

On Table 4.9, (65.6%) of the respondents were of the opinion that Internet services comprising e-mails, g-mail, face book were the foremost ICT facilities available for information resource management in the organization. Next to this is the Local Area Network (LAN)/intranet with (64.8%) of the respondents acknowledged was available for

them in the organization. Others available facilities were Website/computer services (41.6%) and E-Library and E-document (38.4%) respectively.

4.10 Assessment of Personnel/Officers involved in IRM in the MPR

This section presents the analysis on the personnel/officers involved in the management of IR in the MPR. This was done according to their categories/qualifications, adequacy, training and development.

4.10.1 Categories/Qualification of Personnel/Officers involved in IRM in the MPR

This section present the categories/qualification of personnel/officers involved in information resource management in the MPR on Table 4.10.1 and figure 12.

Table 4.10.1: Categories/Qualification of Personnel/Officers involved in IRM in MPR

Personnel/Officers Involved in IRM in MPR	Yes		No	
	Freq	%	Freq	%
Top Management Staff (Directorate Cadre GL15-17)	197	78.8	53	21.2
Computer Analyst and Programmes (GL08-15)	170	68.0	80	32.0
Information Officers from Information and Press Unit (GL08-14)	160	64.0	90	36.0
Librarians/information specialist (GL08-14)	156	62.4	94	37.6
Research Officers and Statisticans (GL08-14)	140	56.0	110	44.0
Administrative/Executive Officer (GL08-14)	140	56.0	110	44.0
Confidential Secretary's/Typist (06-14)	130	52.0	120	48.0
Engineers and Geologist (GL08-14)	130	52.0	10	48.0

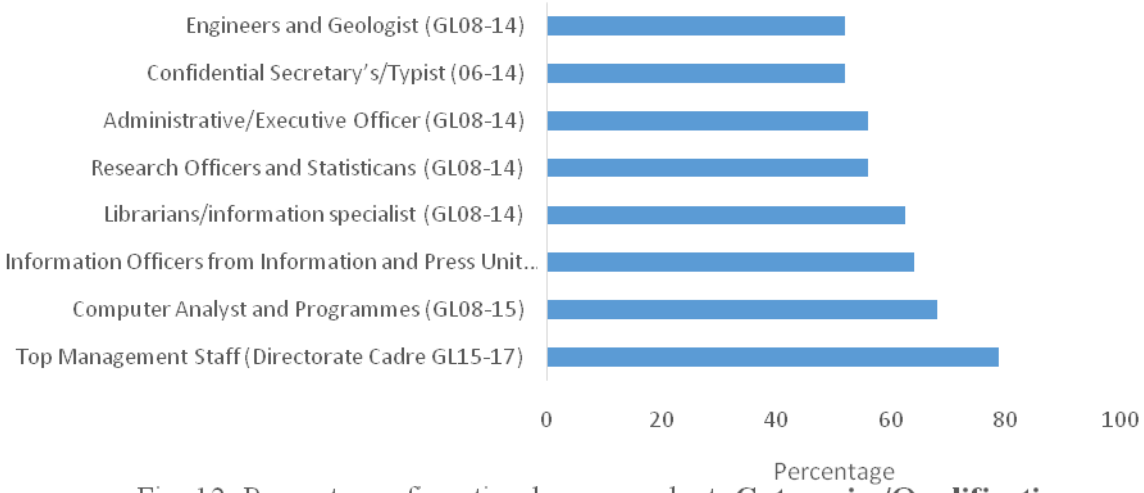


Fig. 12: Percentage afirmation by respondents **Categories/Qualification of Personnel/Officers involved in IRM in MPR**

On table 4.10.1 and figure 12, the highest categories/qualification of Personnel/Officers who are involved in the management of IR in the MPR are the Top Management Staff (Directorate Cadre GL 15-17) officers, scoring (78.8%) of the total respondents. This are the group of staff that need information quickly and regularly for decision making. Next was Computer Analyst and Programmers (GL 08-14) scoring (68%), followed by information officers from the information and press unit of the MPR (GL08-14) with (64%). Librarians/Information Specialist (GL08-14) followed with (62.4%). The next were the Research Officers and Statisticians (GL06-14), and Administrative/Executive Officers (GL08-14) both scored (56%) each of the total respondents. The last but not the least are Confidential Secretary's and Typist (GL06-14) and Engineers and Geologist (GL08-14) both scored (52%) each.

The finding generally revealed that from every cadre of the MPR staff, there was fair representation of officers involved in the management of IR, because from observation on Table 4.10.1 and Figure 12, the study cut across all cadres and categories from the top management staff (Directorate Cadre GL 15-17) down to the Middle

Administrative and Executive Staff GL 08-14 and to junior Cadre GL06. However, all categories and Qualifications scored highly.

4.10.2: How Adequate the Personnel/Officers involved in the Management of Information Resources are in MPR

This section provides the analysis on the adequacy of the Personnel/Officers who does IRM in the MPR. It is presented on Table 4.10.2 and graphically on figure 13.

Table 4.10.2: Adequacy of the Personnel/Officers Involved in IRM in the MPR

Adequacy of Personnel/Officers	Yes		No	
	Freq	%	Freq	%
Adequate	175	70.0	75	30.0
Very adequate	170	68.0	80	32.0
Averagely Adequate	125	50.0	125	50.0
Fairly Adequate	100	40.0	150	60.0
Not Adequate	57	22.8	193	77.2

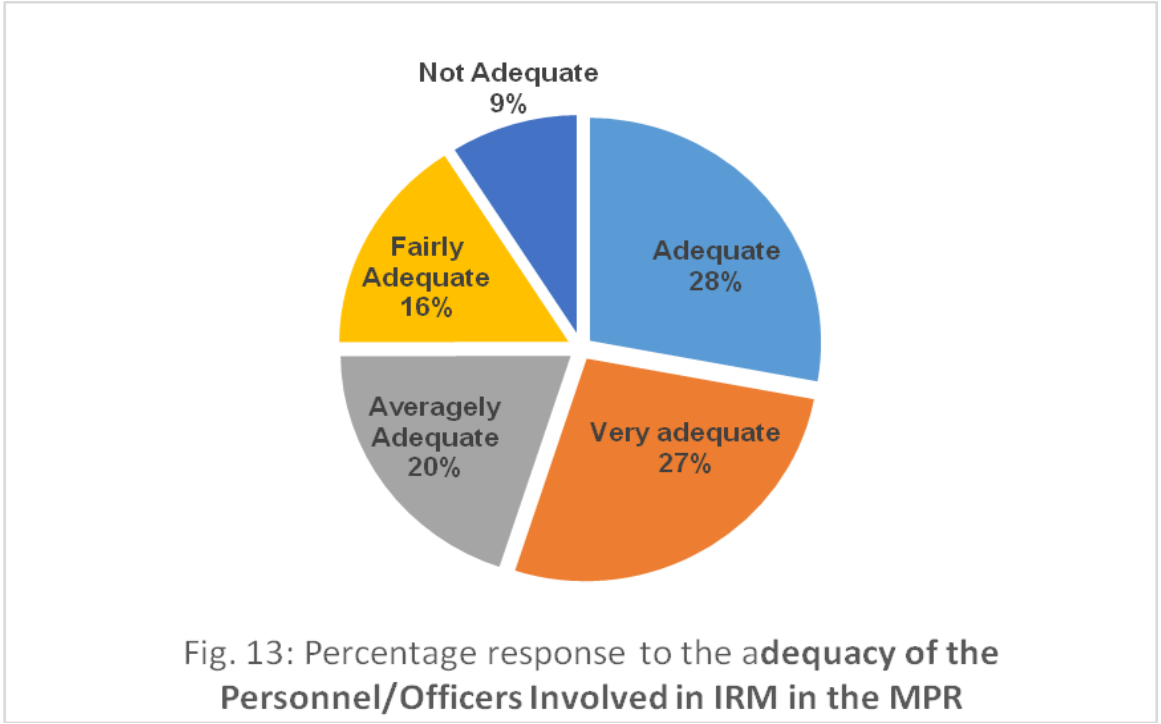


Fig. 13: Percentage response to the adequacy of the Personnel/Officers Involved in IRM in the MPR

The analysis of the adequacy of Personnel/Officers involved in IRM in the MPR revealed that IRM has been adequate with (70.0%) of the respondents responding positively, followed by (68.0%) of the respondents responding that the personnel were very adequate. The next was (50.0%) scored by the respondents referring that it was averagely adequate (40.0%) responded as fairly adequate, and lastly (22.8%) regarded the Personnel/Officers involvement in IRM as not adequate.

4.10.3: How Often Training and Development Programmes are Available for the Personnel/Officers involved in IRM in the MPR

This section presented the analysis on how often training and development programmes are available for the personnel/officers involved in IRM in the MPR on Table 4.10.3, and graph figure 14.

Table 4.10.3: How often Training and Development Programmes are Available for the Personnel/Officers Involved in IRM in the MPR

Training and Development Programmes for Personnel/Officers in MPR	Yes		No	
	Freq	%	Freq	%
Once or twice annually	232	92.8	18	7.2
Sometimes with pressure from staff	232	92.8	18	7.2
Not very often	109	43.6	141	56.4
On quarterly bases	49	19.6	201	80.4
Not at all	31	12.4	219	87.6

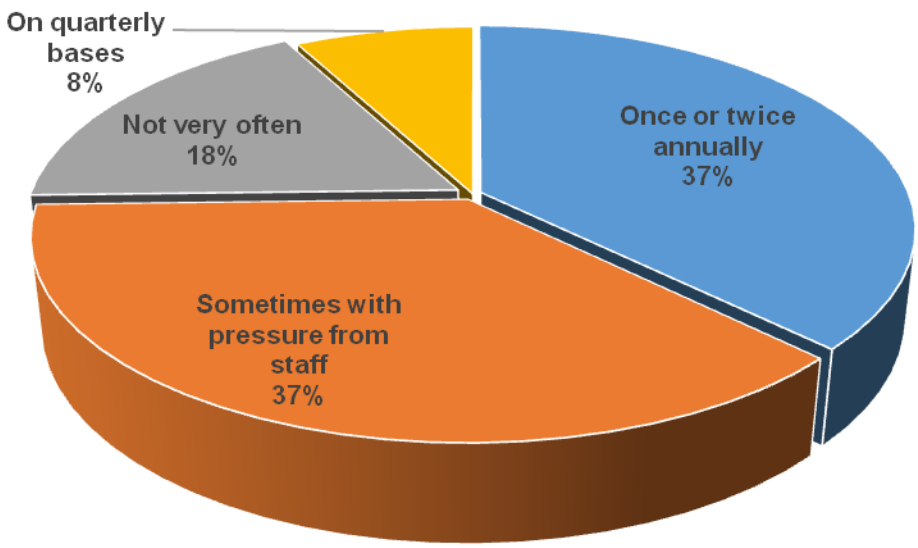


Fig. 14: Percentage rating of the respondents on training and Development Programmes available for the Personnel/Officers involved in IRM in the MPR

The findings on Table 4.10.3 and Figure 14 revealed how often training and development programmes are available for Personnel /Officers involved in IRM in the MPR. (92.8%) from the total respondent agreed positively that training and development programmes was done one or twice annually. This was followed by sometimes with pressure from staff scoring equally with (92.8%). The next scored by (43.6%) are of the view that training and development programmes was not very often. The last two are on quarterly basis with (19.6%) and lastly not at all with (12.4%).

The finding generally revealed the inadequacy of training and development programmes for Personnel/Officers involved in IRM in the MPR, meaning it is not very often.

4.11 Assessment of the Facilities Used for the Protection, Security and Preservation of Information Resources in the MPR

Another objective of the study was to find out the facilities used for the protection, security and preservation of information resources in the MPR. The aim here is to find out how the various information devices and technologies are protected from hazards and other vagaries that could damage the information system.

4.11.1 Facilities Used for the Protection of Information Resources in the MPR

This section presents the opinions of the respondents on the protection of information resources in the MPR on Table 4.11.1 and represented graphically on Figure 15.

Table 4.11.1: Facilities Used for the Protection of Information Resources in the MPR

Facilities for Protection	Yes		No	
	Freq	%	Freq	%
Automatic fire detective system and institutional fire control measure	198	79.2	52	20.8
Constant fumigation of offices	175	70.0	75	30.0
Protective measures of the MPR Database/Databark	107	42.8	143	57.2
Librarians routine, checking of multilated materials and dusting of shelves	104	41.6	146	58.4
Keeping documents in MPR records and documentation Registry	75	30.0	175	70.0
Use of iron cabinet in offices	73	29.2	177	70.8

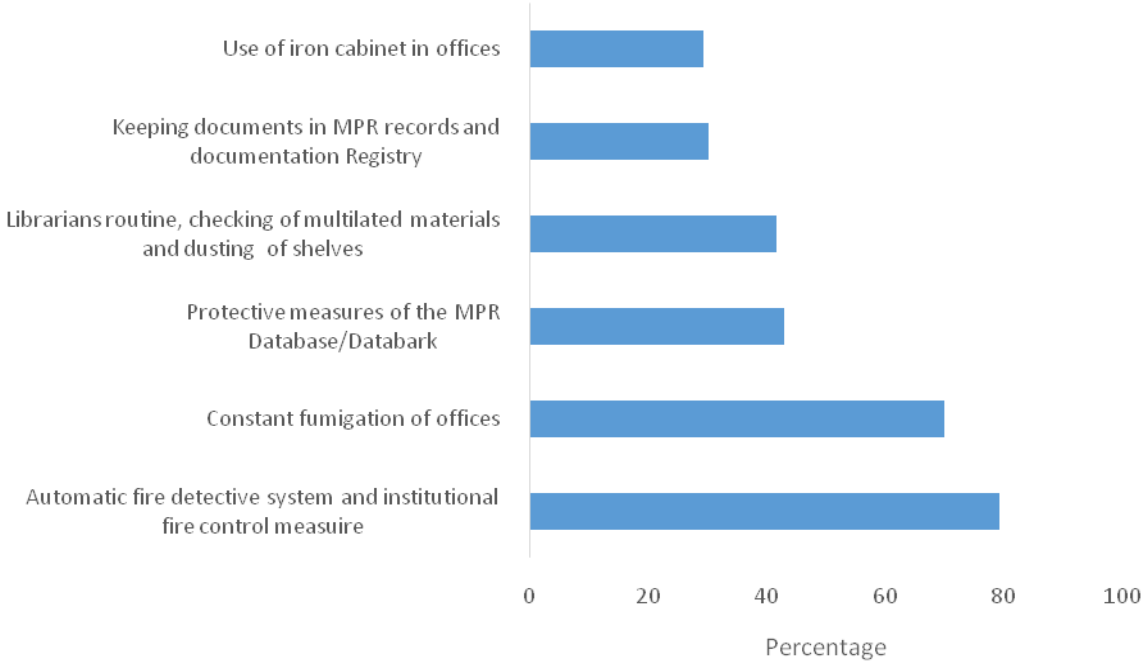


Fig. 15: Percentage of respondents affirmation of Facilities used for the protection of Information Resources in the MPR

On table 4.11.1 the respondents perception for facilities used for the protection of Information Resources in the MPR suggested that Automatic Fire detective system and institutional fire control measures was the highest in ranking with (79.2%), this was followed by constant fumigation of offices with (70%), next was protective measures of the MPR database/databank with (42.8%), Librarians routine checking of multilated materials and dusting of shelves was (41.6%), keeping documents in MPR Records and Documentation Registry was (30%), finally, use of iron cabinet in offices was (29.2%).

4.11.2: Facilities Used for the Security of Information Resources in the MPR

This Section presents measures adopted to safeguard information resources in the MPR, it was presented on Table 4.6.2 and graphically on figure 16.

Table 4.11.2: Facilities Used for the Security of Information Resources in the MPR

Security Facilities	Yes		No	
	Freq	%	Freq	%
Automatic fire detective system and institutional fire control measures	206	82.4	4.4	17.6
MPR Database/Databank	160	64.0	90	36.0
Library/Librarians/Information Specialist Custody	156	62.4	94	37.6
Secured in Records and Documentation Registry	141	56.4	109	43.6
Secured in the permanent secretary's Registry	60	24.0	190	76.0
Scored in the legal unit	57	22.8	193	77.2
Use of iron cabinet in offices	52	20.8	198	79.2

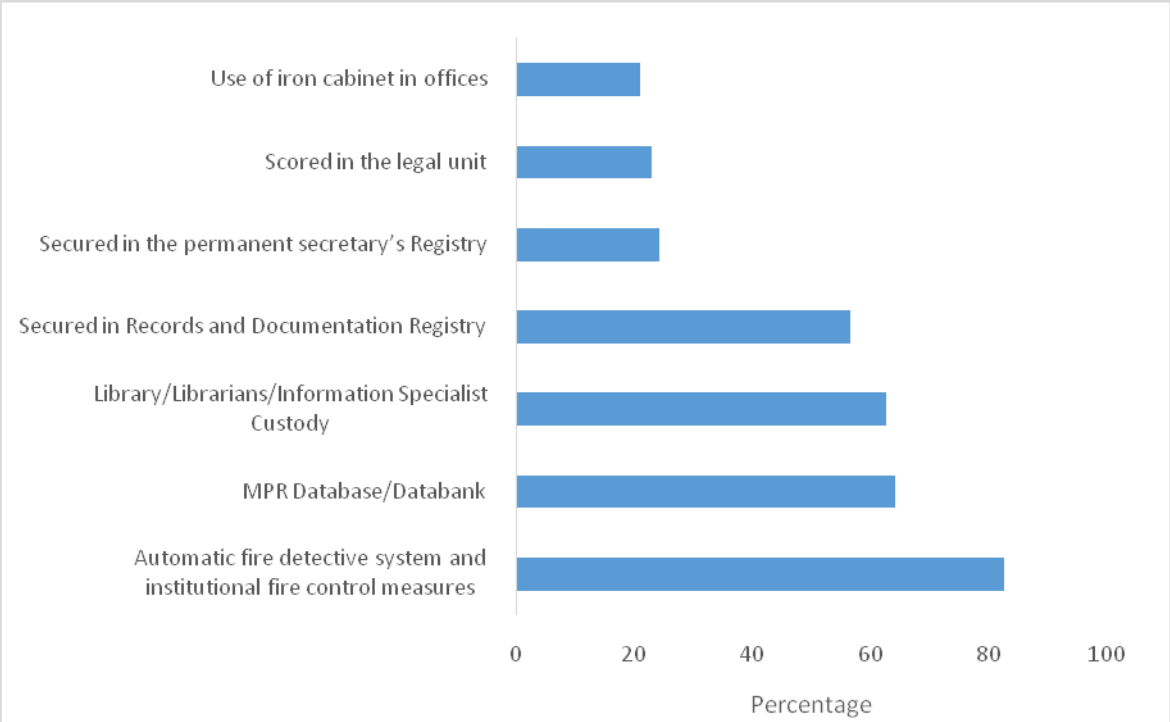


Fig. 16: Percentage of respondents' affirmation of the facilities used for the security of Information Resources in the MPR

Table 4.11.2 and on graph 16 clearly showed that the highest facilities used for the security of information resource in the MPR was the Automatic fire detective system and institutional fire control measures with (82.4%) positive response by the subjects of the

study. This was followed by MPR Database/Databank with (64%), the next in hierarchy was Library/Librarians/Information specialist custody with (62.4%). Secured in Records and Documentation Registry was (56.4%), and the last three measures for the security of information resources in MPR from the opinion of the respondents are secured in the permanent Secretary's registry with (24%), secured in the legal unit (22.8%), finally using of iron cabinet in offices (20.8%).

4.11.3 Facilities Used for the Preservation of Information Resources in the MPR

This section presented the facilities used for information resource preservation in the MPR, so that relevant information resources will not be damaged. Table 4.11.3 and figure 17 gives the analysis.

Table 4.11.3: Facilities used for the Preservation of Information Resources in the MPR

Facilities for Preservation of IR	Yes		No	
	Freq	%	Freq	%
MPR Database/Databank	138	55.2	112	44.8
Constant Fumugatie of Offices	135	54.0	115	46.0
MPR Library Routine checking and dusting of shelves	130	52.0	120	48.0
Keeping documents in Library Reserved Area	112	44.8	138	55.2
Permanent Secretary/Legal Unit Registry	78	31.2	172	68.8
MPR Records and Documentation Registry	78	31.2	172	68.8
Information and press unit reserve	85	34.0	165	66.0

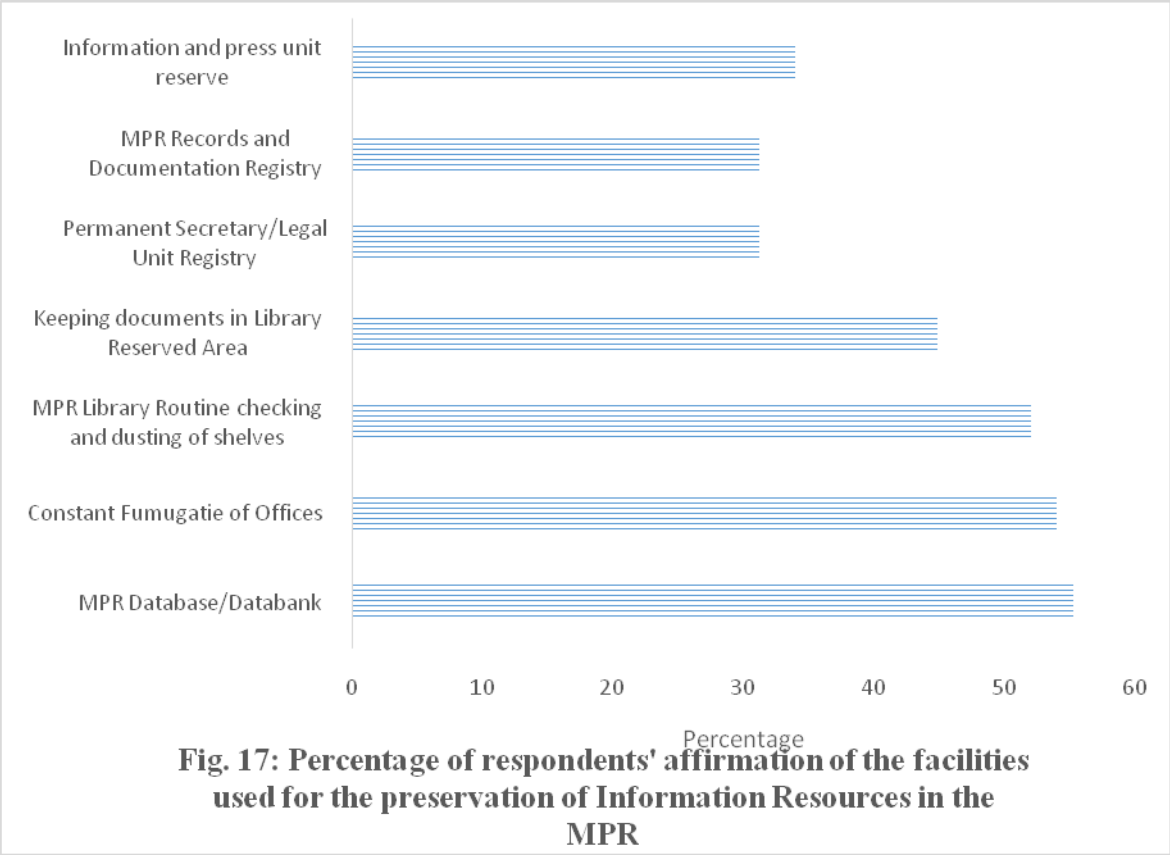


Fig. 17: Percentage of respondents' affirmation of the facilities used for the preservation of Information Resources in the MPR

The respondents opinion for facilities used for the preservation of information resources in the MPR suggested that MPR Database/Databank as the highest with (55.2%) score, next was constant fumigation of offices scoring (54%). MPR library routine checking and dusting of shelves scored (52%) and keeping documents in Library Reserved Area (44.8%). This was followed by Information and Press Unit Registry with (34%). The last two scored (31.2%) each of the total respondent indicating that facilities used for preservation of information resources in the MPR is kept with the permanent secretary/legal unit Registry and MPR Records and Documentation Registry.

4.12 Assessment of Factors that Militated Against Effective Information Resource Management in the MPR

Table 4.12 and Figure 17 identified the factors that militated against effective information resource management in the MPR. This objective aims to identify some of the constraints and problems faced by information personnel in their efforts for effective

information resource management in the organization. In providing solutions to the problems, the respondents offered possible suggestions for enhancing management of information resources in the organization in chapters.

Table 4.12 Opinions of the Respondents on Factors Militating Against Effective Information Resource Management in the MPR

Factors Militating Against Effective Information Resource Management in MPR	Yes		No	
	Freq	%	Freq	%
Lack of enough information and communication technologies (ICT)	96	38.4	154	61.6
Lack of qualified information processionals/personnel	90	36.0	160	64.0
Most staff of the MPR are not ICT literate	120	48.0	130	52.0
Lack of adequate computer personnel	110	44.0	140	56.0
Lack of training facilities and workshops/seminars and conferences for information officials /librarians on how to handle information	135	54.0	115	46.0
Lack of adequate funds for data management.	90	36.0	160	64.0
MPR lacks a standard library and information centre	100	40.0	150	60.0
Lack of Local Area Network (LAN) in MPR	110	44.0	140	56.0

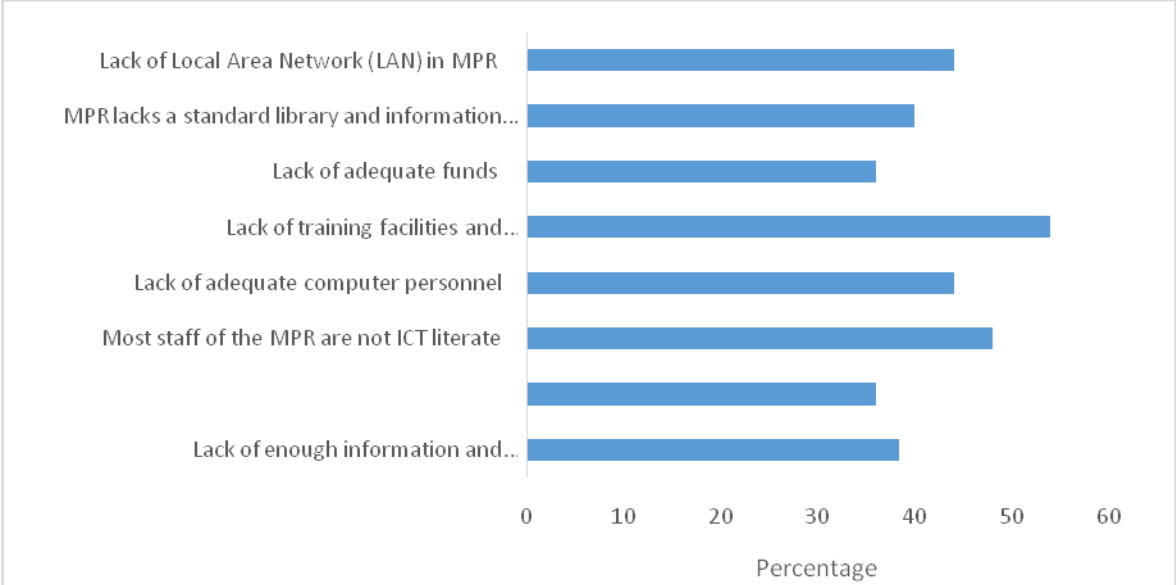


Fig. 18: Percentage affirmation of the respondents on factors militating against effective Information Resource management in the MPR

On Table 4.12 and graph figure 18, among the factors listed as constraints to effective information resource management in the MPR, lack of training facilities and workshops, seminars and conferences for information officials and staff of the MPR on how to handle information with (54.0%) was rated as the highest militating factor. Next in the hierarchy was lack of ICT literacy by staff (48.0%). The respondents acknowledged that most staff of the MPR are not ICT literate while 44.0% of the staff said the organization lack adequate computer personnel and officials to man the available information technology devices in the organization.

Apart from personnel training and lack of knowledge of ICT there was also the problem of infrastructural facilities and equipment for effective information resource management in the organization. In the Table and the graph, (38.4%) of the respondents were of the opinion that the organization lacked adequate information and communication technologies (ICT) while (40.0%) agreed that the MPR lacked a standard library and information centre, while (36%) of the respondents viewed that the organization lacked adequate funds for proper database management. Two options scored (44.0%), the respondents were of the view that Local Area Network (LAN) and lack of adequate computer personnels was lacking in the MPR for effective information resource management. Therefore it could be said that problems of training, lack of ICT skills and inadequate facilities and equipment for information and communication technology were the major factors militating against effective information resource management in the organization.

4.13 Assessment of the Factors Suggested to Improve Information Resource Management in the MPR

The last objective of the study was to identify measures that could enhance and improve the management of information resources in the MPR. Table 4.13 and graph

figure 19 below revealed the respondents' opinions of their effectiveness or otherwise scored in frequencies and percentages. The Table is presented with graphical illustration in Figure 19.

Table 4.13 Factors Suggested to Improved Information Resource Management in the MPR

Factors Suggested the Improve information Resource Management in the Organization	Yes		No	
	Freq	%	Freq	%
Establish a standard library and information centre	160	64.0	90	36.0
Employ more qualified information personnel/officers	110	44.0	140	56.0
Training of information personnel /librarians on how to handle information resources	170	68.0	80	32.0
Organize workshop, seminars and conferences on information resource management	125	50.0	125	50.0
Application of security measures on relevant information resources	100	40.0	150	60.0
Training and application of ICT and computerization of information resources in all departments of the MPR	165	66.0	85	34.0
Store information resources on backup tapes, flash drives, videotext (CD/VCD/DVD), microfilm, macrofitch Microfiche, diskette and disc	95	38.0	155	62.0
Local Area Network (LAN) should be properly put in place in order to manage information resources effectively	155	62.0	95	38.0

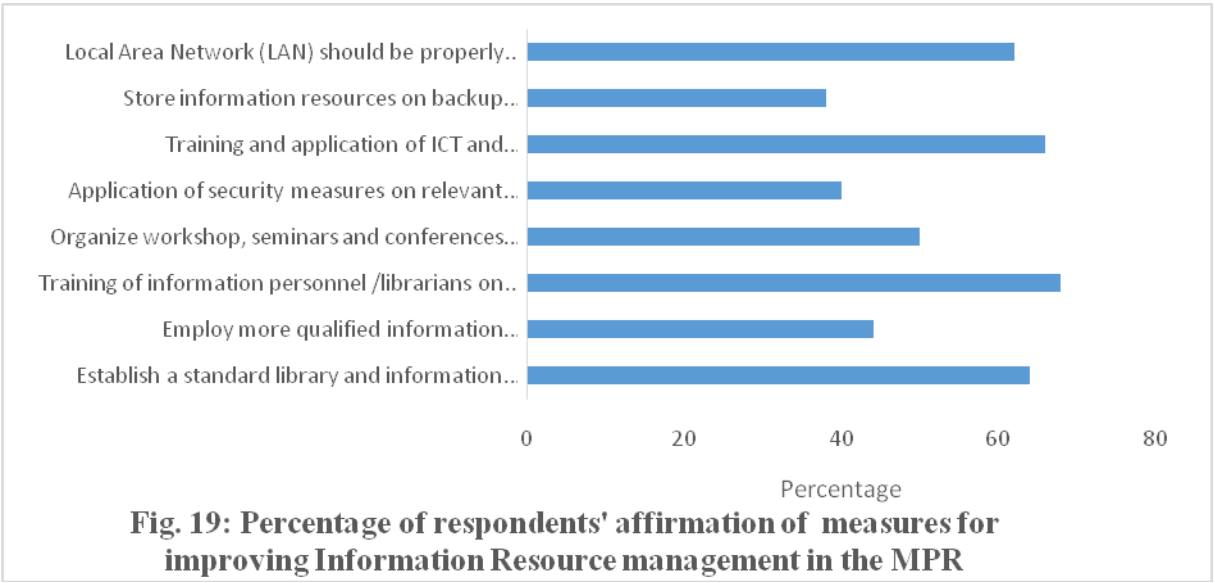


Fig. 19: Percentage of respondents' affirmation of measures for improving Information Resource management in the MPR

Of all the measures suggested for improving the effectiveness of information resource management in the MPR as shown in Table 4.13 and Figure 19, training of information personnel/librarians on the application of information and communication technology was rated high by the respondents with (68%) scores, (66%) of the respondents were of the view that training on the application of ICT and computerization of information resources in all departments of the MPR could be a major boost to effective information resource management in the organization. To this end, (50%) of the respondents were of the view that the organization should organize workshops, seminars and conferences on information resource management through which staff could participate and be enlightened on the use of ICT. Furthermore (44%) of the respondents were of the view that the MPR should employ more qualified information personnel and officers to man the information resources in the organization.

(64.0%) of the respondents were of the opinion that the MPR should establish a standard library and information centre, while (62%) of the respondents were of the suggested that the MPR should establish Local Area Network (LAN) which should be properly put in place in the organization in order to manage information resources effectively.

(38%) of the respondents also suggested that MPR should store her information resources on backup tapes, flash drives, videotext (CD/VCD/DVD), microfilm, macrofilm, microfiche, diskette and disc they feel it could be a measure to improve IRM in MPR. While (40%) of the respondents were of the opinion that the organization should employ relevant security measures to protect her information resources.

From the analysis of the measures, training of staff on ICT, provision of ICT facilities and equipment and adoption of security measures like backup storage system

were some of the measures suggested by the respondents that could enhance effective information resource management in the organization.

REFERENCES

Apostolou, K and Menzas, T in Cook, N. (1999), The Management of Information from Achievers. London: Gower. P. 25.

Argote, P and Ingram, S in Sippings, G. (2000).The Use Information Technology by Information Services. ASLIB-Information Technology Survey. London: Association of Information Management. P. 41.

Davenport, T. H. and Prusak L. (1998).Working Knowledge: How Organizations Manage What They Know. Boston, Massachusetts: Harvard Business School Press P.9.

Dixion N. M.(1999). "Organizational Cycle: A Review of the Literature with Implication for HRD Professional." Human Resources Development Quarterly 3CD, P. 29 & 48

Sharon, M. and Williams, J. B. (1995).How Mangers get the Information They Really Need. United Kingdom: The Information Mosaic. P. 18.

Sverlinger, M. (2000).Information Sources for Managers. Management Decision. London: University Press. P. 23 & 27.

Sverlinger, P. O. (2000) Managing Knowledge in Professional Service Organization, Unpublished Doctoral Thesis, Department of Service Management of Technology Gothenburg Sweden. P. 15.

Takeuchi, N. (1995).Computer Information Theory and Cybernetics Modern Science Series. Western Germany: Rubert Hart-Davis Educational Publication. P. 23.

Vito, A. (1999). Knowledge Transfer and Inter-firm Relationship in Industrial Districts: The Role of the Leader Firm, Technovation, P. 19.

CHAPTER FIVE

SUMMARY, CONCLUSION, RECOMMENDATIONS AND SUGGESTIONS FOR FURTHER RESEARCH

5.1 Introduction

This chapter presents the summary of the study, findings, conclusion, recommendations and suggestions for further research.

5.2 Summary of the Study

The purpose of this study was to investigate information resource management practices in the Ministry of Petroleum Resources, Abuja. The research method adopted was the survey research whose instrument was questionnaire. The questionnaire was designed by the researcher and it covered the information resources and technology used in managing information resources at the MPR for generating, organizing, storing, retrieving and disseminating information. Also, the effects of ICT on IRM and the facilities used for the protection, security and preservation of information in the MPR were analyzed, questions on personnel involved in IRM were not left out, including factors that militated against effective information resource management, and factors suggested to improve information resource management in organizations.

The population of the study comprised all the 800 staff of the Ministry of Petroleum Resources (MPR). The sample size was 260 staff selected using the purposive random sampling from the top management staff to the middle and junior executive cadre of the Ministry. The purposive sampling techniques was used so that results obtained from the sample size are generalized to the bigger entity. .

To effectively investigate the management of information resources in the organization, a structured questionnaire was designed (See Appendix I) and two hundred and sixty research questionnaires were administered to the subjects of the study and a response rate of two

hundred and fifty was received. The questionnaires returned were analyzed using the Statistical Package for Social Science (SPSS) and the results were descriptively analyzed using tables and graphical representations.

The study was structured into five chapters. Chapter one gave the background of the study, statement of the problem, the objectives and research questions, the scope and limitation of the study. Chapter two consisted of the review of related literature to the study. In chapter three, the methodology used in the study was stated. The statistical analysis and interpretation of the findings from the analyzed data were presented in chapter four. The chapter is made up of an analysis of the respondents' opinions on the types of library/information centre are available in the MPR, types of information resources generated in the MPR, types of information and communication technology used for the management of information resources in the organization, how information resources were processed in terms of inputting, storage, retrieval and dissemination, how information resource management enhances activities and productivity in the organization, the strategies used for the protection, security and preservation of information resources in the MPR. Lastly, the factors that militated against effective information resource management in the Ministry of Petroleum Resource and factors suggested to improve IRM were analyzed in order to understand the concept of information resource management in the organization.

5.3 Summary of the Findings

The major findings of the study are summarized below:

1. Most of the information resources generated in the MPR are correspondences/personal information and memoranda/financial information. They are the major resources of information generation in the organization (MPR), followed by conference papers, workshops and seminar proceedings, technical reports on Oil and gas projects, statistical data of oil producing states and countries, stakeholders report (PTDF,PTF,

PTI, NNPC, DPR, DEF, PPPRA) and with less emphasis on journals/bulletins, newsletters on petroleum related countries, magazines, photographs, maps and altlas and monographs.

2. Among the information technologies and methods used for information resource management available in the organization were files and folders with the cabinet system, computer and its peripheral services along with the necessary appendages, telephone, Internet/e-mail and facsimile transmission/videotext were the mostly used.
3. The organization processed her information resources through the use of some technological devices like the computer input and output units, storage of information resources with computer storage media through backup system with hard disk, flash drive, CD, etc.
4. The respondents were of the opinion that effective management of information resources enhanced their productivity through ease of access and dissemination resulting from proper security acquired through backing up system.
5. The organization had better backup system which ensured security of information resources available for management.
6. It was observed that most of the staff lacked the necessary ICT skills for the effective management of information. In addition, staff training as well as ICT equipment and facilities were lacking in the organization.
7. A standard library and information centre was not established, which resulted to improper handling of printed and electronic based information.

5.4 Conclusion

From the findings of this investigation into the topic "Information Resource Management in the Ministry of Petroleum Resources, Abuja" It was observed that the organization is actually adopting innovative measures in the pursuit of information resource management. This adoption of innovation in information resource management has led to enhanced productivity among staff of the organization. However, there are some problems which mostly relate to adaptation by staff. It was observed that most of the staff did not have the requisite knowledge of ICT usage. In addition, the required training or retraining was not adequate. Consequently management of information resources were not adequately manned in the organization. There was also the problem of inadequacy of computer equipment and the required facilities to enable effective application of ICT in the management of information resources in the organization. However, the extent of information resource management, though skewed towards the conventional files and folder method, could be said to be adopting the ICT gradually and was impacting on the staff' productivity in the organization.

5.5 Recommendations

Based on the research questions and the findings obtained from the data analysis, the researcher commends the following as a possible solution to the problems identified with regards to information resource management in the MPR.

1. It was discovered that the MPR has not fully achieve a standard library/information centre. The e-library project started since 2010 and is still dragging due to corruption in the system. The researcher recommends that the MPR management should kindly consider and complete the e-library project so that a well organized/standard library can be put in place, to measure up with the world best practices in librarianship.

2. The type of information resources generated in the MPR mostly relates to petroleum/Gas related materials. The researcher is recommending that the information resources should be properly handle and manage with care, because the MPR is a mother ministry to all the Oil and Gas (Petroleum Product Organizations) which is the major source of the nations gross domestic product (GDP). .

3. Several methods are used to generate information resources in the MPR, but the most common was the memos and file/folders followed by the Research and statistical data. This devices seems to be manual in nature even though cannot be ruled out completely in the system because both manual and computerized methods are independent of each other, one cannot operate efficiently without the other in organizations. However, the researcher recommends that the MPR should device means of using new ICT facilities to generate information resources in the organization, in order to avoid time wastage to produce information for the top management staff.

4. The facilities and equipments available for information resource processing in the MPR were numerous but still not sufficient for staff use. The researcher recommends that MPR management should purchase enough facilities and equipment for processing information resources, so that IRM can be achieved effectively.

5. The type of ICT facilities available in MPR have not really been put in place properly. The researcher is recommending that all the ICT facilities that are not activated by the MPR should be considered to put to use, so that IRM can succeed in the system i.e. LAN.

6. Generally, the ICT has a great effect on IRM in the MPR. The researcher recommends that more qualified computer operators (analyst, programmer etc) should be employed to manage the ICT facilities properly for best result.

7. The Personnel/Officers involved in the IRM in MPR ranges from the top management staff (Directorate Cadre) to the Middle Administrative and Executive officers, down to the junior cadre. The general problem faced by this categories of staff is lack of training programmes to boost their ability. The researcher recommends that enough training programmers should be organized on quarterly bases to enable Information Officers, Librarians, Research Officers, Engineers, Geologist, Secretary and Statisticians etc to have the pre-requisite knowledge of how to manage information resources.

8. The usage of ICT on information resources make the job better in the MPR, but as mentioned above, most staff are not computer literate. The researcher recommends that ICT capacity building programmes (workshops, seminars and trainings) be organized for the MPR staff so that they can be conversant with the ICT operations.

9. Most MPR information resources are secured in the computer system and the MPR database/databank. The problem is lack of sufficient fund and personnel to man the databank/databases. The researcher is suggesting that the MPR management should put aside corruption and provide enough fund to maintain the databank/database so that it will not be jeopardize. Also security facilities should be put in place properly in order to preserve and protect useful information. Furthermore, it was revealed that most of the MPR information resources are scattered in various department of the Ministry, like some with the legal department, some with the information and press department, some in the library, some with the permanent secretary. This means that confidential information can be easily licked out. The researcher recommends that all information resources in the MPR should be deposited only in the library/information centre, and the MPR database/databank for security purposes. However physical

protection and preservation of information materials has been tackled through fumigation and continuous tidying of the library and offices.

10. There were few factors that militated against effective information resource management in the MPR. However, the researcher is recommending that those factors suggested to improve IRM in the MPR should be properly handled, like the training of the staff, organizing of workshops, seminar and conferences, establishing of a standard library/information centre and providing enough ICT facilities.

5.6 Suggestions for Further Research

The researcher focused on the Information Resource Management in the Ministry of Petroleum Resources Abuja. The researcher is of the view that similar research work should be carried out in some of the parastatals attached to the Ministry like; Petroleum Training Institute (PTI); Petroleum Equalization Fund (PEF); Petroleum Technology Development Fund (PTDF); and Petroleum Product Prizing Regulatory Agency (PPPRA). Another organization where similar study could be carried out is the Education Trust Fund (TETFUND) which has a similar function as the PTDF. Furthermore, further studies in related areas of information resource management would be worth investigating in order to know how information resource management practices are carried out in most large public organizations in Nigeria. This would add to knowledge because it would help most public organizations appreciate the appropriateness of information resource management practices; thereby improving productivity and attainment of the aims, objectives and goals of public organizations, and consequently, if operations are carried out effectively and efficiently in all public organizations, this means every sector of the Nigerian economy shall perform and function properly, thereby moving the nation forward into an industrialized and developed nation.

APPENDICES

APPENDIX I

BIBLOGRAPHY

Ajewole, Bayo (2001). Record and Information Resources Management in the Public service: A theoretical and practical framework, Badagry: The Administrative Staff College of Nigeria (ASCON).

Ala, (1966). World Encyclopedia of Library and Information science– 2nd ed. London: Acclimatize Press Ltd.

Ale Sandrini, K (2000). Survive Information Overload, Homewood, Business Irwin

Allen, T.J. (1987). Managing the Flow of Information. Boston: MIT Press.

Banerte (2003)." Demand for Information Managers, a Canadian Survey" New York: John Wiley.

Bittner, J.R. (1989). Mass Communication: An Introduction. 5th ed. London: Prentice Hall inc.

Chapman and Hall. (1995). The Importance of New Information Technology. Journal of Information Technology. Vol. 10, No. 4, United.

Convey, J. (1992). On-line Information Retrieval. An Introduction Manual to Principles and Practices. London: Clive Bingley. -4thed.

Data, H.O.D. (1997).The Relevance of Information Management on National Security. Abuja: National Defense College. Participant Course 5.

David, A. (1993). Software Requirements. Objects Functions and Status. London: Englewood Cliffs, N.J. Prentice Hall.

Ejiofor, P.N.O. (1989). Management in Nigeria. Theories and Issues. Onitsha: Macmillan Press.

Encyclopedia of Library and Information Science (1986) vol. 9.

Evarest, C. Madu (20040 Technology for Information Management and Services. Ibadan: Evi Coleman.

Eyre, J.et al. (1971). Computer Systems: An Introduction for Librarians. London: Clive Bingley Ltd.

Fla, B.H. (1968). Computer Systems. Computer Based Information Retrieval System. London: Clive Bingley Ltd.

Glugboc, B. (1999). Information Management during National crisis Implication for National Security. Defense College, Course 7 hospital information systems Journal of Information science. London: Third refinement workshop. Springerverlay -22nd ed. Vol. 3.

James, Robertson (2005). 10 Principles of effective Information Management htt/www.Steptwo.com.au.

James, S. (1978). Information Systems in Management. United Kingdom: Wadsworth Publishing Company.

Kanta, F. (2000). Information Management: Myths and Realities. (http/www.information org/doc.mrog.htm).

Karen, Dutch (2001). Management Information: A handbook for Management. London: free press.

Kaye, D. (1991). Informationa and Business.An introduction. London: Library Association.

Kim, K.K (1989). User Satisfaction: A Synthesis of three different perspectives Journals of Information Systems.Vol. 4, No 1. Kingdom: Oxford United. Le.SlieWillicocks.

Kothari, C.R. (2008). Research Methodology and Techniques. Delphi, India> New Age International Ltd. 2nded.

Lamber, J. and **Lamber.**J. (1991).How to find information in Science and Technology. London: Library Association Publishing. 2nded.

Lee, M.K.O and Pow, J. (1996). Information access behavior and expectation.

Nwaoke, N.W. (1993). Management skill and Techniques for Secretaries and Personal Assistants Lagos: CSS Bookshops Ltd.

Nworgu, B.G. (1991). Educational Research: Basic Issues and Methodology. Nsukka: Wisdom Publisher Ltd..

Okoduwa, B. (1995). Management Dialogue: Lagos: Praskills Nigeria Ltd.

Opara, UmunnaNnaemeka (2000) Managing Information for Effective Decision Making. Ibadan: Evicoleman.

Osuala, E.C. (2005). Introduction to Research Methodology. Nsukka: African Publishers Ltd.

Ozomah, S.(1997). "Secretaries of Yesterday, Today and Tomorrow. "London: The Guard. Vol. 13, 24th April.

Rebertson J. (2005).Ten Principles for effective management of information knowledge management (km) column.

Vitality C. (2008).Providing Information Communication Technology based Support to distance Education students: A case study of the University of Zambia, Lusaka Zambia.

Yahaya, A.D. and Akinyele, C. (1992).Human Resources Development and Utilization, Politics and issues. Badagry: Administrative Staff College.

Young, A. and Peters (2003) Management Information System in Libraries New York: Merced Dekker

Singhal, A. (2001) "Morden Information Retrieval "Bulletin of IEEE Computer Society Technical Committee on Data Engineering. Vol. 24, P. 16-18.

Yuezigo, Zhang (2000). Definition and Science of Information on Processing and Management. New York: McGrew Hill.

Trevor, John B. (2000). The Management Science Handbook, 2nd Edition: London, Pitman.

APPENDIX II

Department of Library and
Information Science
Faculty of Education,
Ahmadu Bello University Zaria,
7th May, 2012.

The Permanent Secretary,
Ministry of Petroleum Resources
NNPC Towers
Central District,
Abuja

Dear Sir/Madam

INTRODUCTORY LETTER

This questionnaire is on a survey study to gather data/information on the topic: Information Resource Management in the Ministry of Petroleum Resources Abuja. The study is in partial fulfillment of the requirement for the award of Master Degree in Library and Information Science in the Ahmadu Bello University, Zaria.

In completing the questionnaire, please answer all the questions objectively and clearly. Your answer will be treated confidentially.

Thanks for your cooperation.

Yours faithfully,

Sarah Hamidu Gadzama
PG Student

APPENDIX III

QUESTIONNNAIRE

Thesis Title: Information Resource Management in the Ministry of Petroleum Resources, Abuja.

Section A: DESIGNATION

Please Tick (√)

Designation

1. The Permanent Secretary [ ]
2. Director Special Duties [ ]
3. Director of Procurement [ ]
4. Direction Human Resources Management [ ]
5. Director Planning, Research and Statistics [ ]
6. Director Legal department [ ]
7. Director Finance and Account [ ]
8. Deputy Director …….. (Please state designation)
9. Assistant Director…….(Please state designation)
10. Computer Analysis [ ] Programmer [ ] Operator [ ]
11. Confidential Secretary to ……(Please state designation)
12. Research Officers and Statisticians ..…… (Please state designation)
13. Engineers and Geologist ……(Please state designation)
14. Librarian/Information Specialist……..(Please state designation)
15. Chief Admin. Officer……(Please state designation)
16. Assist. Chief Admin. Officer……(Please state designation)
17. Admin. Officer…… .(Please state designation)
18. Executive Officer……. …(Please state designation)
19. Information Officer……. …(Please state designation)
20. Any other, please specify……

Section B. TYPES OF LIBRARY/INFORMATION CENTRE, AND INFORMATION RESOURCES GENERATED IN THE MINISTRY OF PETROLEUM RESOURCES (MPR)

Please Tick (√) as is appropriate

1. What type of Library/Information Centre is available in the MPR?

(a) Government Library [ ]
(b) Information and Press Unit [ ]
(c) Special Library [ ]
(d) Documentation and Reference Library [ ]
(e) Standard Library (E-library) [ ]
(f) Research and Information Centre [ ]

2. Which of the following types of information resources were generated in your department/organization?

(a) Memoranda/financial information [ ]
(b) Correspondence/personal Information [ ]
(c) Technical reports on Oil and Gas projects [ ]
(d) Conferences/Workshops/Seminars proceedings [ ]
(e) Statistical data from Oil producing states and countries (OPEC) [ ]
(f) Newsletters on Petroleum related organization [ ]
(g) Photographs, Maps and Alases of oil producing countries [ ]
(h) Journals /Bulletins on Petroleum matters [ ]
(i) Magazines / Newsletters [ ]
(j) Monographs (print base and electronic base information resources) [ ]
(K) Stakeholder report (PTDF, PTF, PTI, NNPC, DPR, PPPRA) [ ]
(m) Others please specify……..

3. What are the methods used to generate information resources in the MPR?

(a) Memos and files [ ]
(b) Use of telephones/correspondence [ ]
(c) Research and Statistical Datas/Reports from field work [ ]
(d) Use of fax [ ]
(e) Computers online retrieval devices [ ]
(f) Workshop, Seminars and conference paper [ ]
(g) Electronic mails [ ]
(h) Internet /Official Transactions [ ]
(i) Sensitization programs [ ]
(j) Others please specify……

4. What are the information resources processing techniques used in the MPR?

(a) Analysis from committee in the MPR [ ]
(b) Files, folders and telephone services [ ]
(c) Selective Dissemination of Information by information officers [ ]
(d) Networking with other organizations/resource sharing [ ]
(e) Analysis from government publications [ ]
(f) Online resource (digital archives/meetings, seminars, workshops, direct enquiring from other organizations [ ]
(g) Computer input and output [ ]

Section C. HOW INFORMATION RESOURCES WERE PROCESSED IN THE MPR?

Please tick (√) as is appropriate.

1. What are the equipments available for information Resource Processing in the MPR?

(a) MPR Database/Databank [ ]
(b) Computers (Input and Output) [ ]
(c) Records and Documentation Register [ ]
(d) Files/Folders [ ]
(e) Accession Register and Indexing/Abstracting Register [ ]
(f) Telephone/Scanners/Fax Machine [ ]

2. What technology was used to input information resources in the MPR?

(a) Computer memory [ ]
(b) Library Accessories Register [ ]
(c) Indexes and Abstracts [ ]
(d) Videotex (CD/DVD/VCD)/Backup tapes [ ]
(e) Optical Disc/Diskette and magnetic tapes [ ]
(f) Microfilm, macro film and microfiche [ ]
(g) Others, Please Specify ……..

3. What technology is used for storing information resources in the MPR?

(a) Computer memory [ ]
(b) Files, folder & filling cabinets [ ]
(c) Desk drawers [ ]
(d) Magnetic tapes [ ]
(e) Audio and video tapes [ ]
(f) Optical disks, diskette and disc [ ]
(g) Microfilm, macro film, microfiche [ ]
(h) Slides/Umatic tapes [ ]
(i) Library shelves [ ]
(j) Backup tapes/videotext (CD/DVD/VCD) [ ]
(k) Others, Please Specify……

4. What technology is used to retrieve information resources in your department/organization?

(a) Computer memory [ ]
(b) Manual from files/ folders and filling cabinet [ ]
(c) Backup tapes & videotext (CD/DVD/VCD) [ ]
(d) Online Retrieval Devices/Internet [ ]
(e) Audio and video tapes, magnetic tapes [ ]
(f) Indexes and abstracts [ ]
(g) Others, Pease Specify……..

5. What is the method used to disseminate information resources in the MPR?

(a) Movement of files and folders/display on notice board [ ]
(b) Computer printout /online retrieval system [ ]
(c) Telephone, internet/E-mail [ ]
(d) Facsimile transmission/videotext (CD/DVD/VCD) [ ]
(e) Selective Dissemination of Information, diskette, disc, microfilm, macro film and microfiche [ ]
(f) Electronic Surveillance [ ]
(g) Others, Please Specify……

Section D: INFORMATION RESOURCE MANAGEMENT AND ICT IN THE MPR

1. What is the effect of Information and Communication Technology (ICT?) on information resource management in the MPR?

(a) Retrieval and disseminate of relevant information quickly [ ]
(b) Selective Dissemination of Information (SDI) editing processes [ ]
(c) Time spent in carrying out activities and programs [ ]
(d) Improved decision making by management staff in the MPR [ ]
(e) Sorting out relevant information resources by Information personnel/officers [ ]
Personnel/Officers for the MPR management [ ]
(f) Storage and security of relevant information in the MPR [ ]
(g) Quick interaction with stakeholders of the MPR [ ]
(h) Others please specify……

2. How the use of ICT on Information Resources Management Enhanced MPR staff Activities and Productivity?

(a) IRM enhances collaborative activities with stakeholders [ ]
(b) IRM enhances technology knowledge sharing program (TKSP) with other organization [ ]
(c) IRM enhances decision making for management [ ]
(d) IRMImproves database management [ ]

(e) IRM facilitates speedy retrieval of relevant information by MPR staff [ ]
(f) Others please specify……

3. What are the types of ICT facilities available for IRM in the MPR?

(a) Local Area Network (LAN)/Internet [ ]
(b) E-Library/E-Document [ ]
(c) Website/Computer Services [ ]
(d) Internet Services (e-mails, g-mails, facebook [ ]

SECTION E: PERSONNEL/OFFICERS INVOLVED IN IRM IN THE MPR?

1. What are the categories/Qualification of personnel/officers involved in IRM in the MPR?

(a) Top management staff (GL15-17) [ ]
(b) Computer Analyst and Programmers (GL08-14) [ ]
(c) Information Officers from Information and Press Unit (GL08-14) [ ]
(d) Librarians/Information Specialist (GL08-14) [ ]
(e) Research Officers and Statisticians [ ]
(f) Administrative/Executive Officers (GL06-14) [ ]
(g) Confidential Secretary's/Typist (06-14) [ ]
(h) Engineers and Geologist (GL08-14) [ ]

2. How Adequate are the Personnel/Officers involved in IRM in the MPR?

(a) Adequate [ ]
(b) Very Adequate [ ]
(c) Averagely Adequate [ ]
(d) Fairly Adequate [ ]
(e) Not Adequate [ ]

3. How often Training and Development Programmes are available for Personnel/Officers involved in IRM in the MPR?

(a) Once or twice annually [ ]
(b) Sometimes with pressure from staff [ ]
(c) Not very often [ ]
(d) On quarterly bases [ ]
(e) Not at all [ ]

SECTION F: FACILITIES USED FOR THE PROTECTION, SECURITY AND PRESERVATION OF INFORMATION RESOURCES IN THE MPR

1. What are the facilities used for the protection of information resources in the MPR?

(a) Automatic fire detective system and institutional fire control measures [ ]
(b) Constant fumigation of offices [ ]
(c) Protective measures of the MPR Database/Databank [ ]
(d) Librarian's routine checking of multilated materials and dusting of shelves [ ]
(e) Keeping documents in MPR records and documentation registry [ ]
(f) Used of Iron Cabinet in Offices [ ]

2. What are the facilities used for the security of Information resources in the MPR?

(a) Automatic fire detective system and institutional fire control measures [ ]
(b) MPR Database/Databank [ ]
(c) Library/Librarians/Information Specialist Custody [ ]
(d) Secured in Records and Documentation Registry [ ]
(e) Secured in the Permanent Secretary's Registry [ ]
(f) Use of Iron cabinet in offices [ ]

3. What are the facilities used for the preservation of information resources in the MPR?

(a) MPR Database/Databank [ ]
(b) Constant Fumugation of offices [ ]
(c) MPR Library Routine Checking and Dusting of Shelves [ ]
(d) Keeping Documents in the Library Reserved Area [ ]

SECTION G: FACTORS MILITATING AGAINST IRM AND FACTORS SUGGESTED TO IMPROVE IRM IN MPR

5. What factors militated against effective information resource management in the MPR?

(a) Lack of enough information and communication technologies (ICT) [ ]
(b) Lack of qualified information officers [ ]
(c) Most staff of the MPR are not ICT literate [ ]
(d) Lack of adequate computer personnel/officers [ ]
(e) Lack of training facilities and workshops/Seminar and Conferences for information officers/librarians on how to handle information [ ]
(f) Lack of adequate fund for proper database management of information resources [ ]
(g) MPR has not achieved a standard Library and information centre [ ]
(h) Local Area Network (LAN) is not properly achieved by MPR for effective information resource management [ ]
(i) Others, Please Specify……..

6. What method would you suggest to improve information resource management in your organization?

(a)	Establish a standard e-library and information centre	[ ]
(b)	Employ more qualified information personnel officers	[ ]
(c)	Training of information personnel and librarians on how to handle information	[ ]
(d)	Organize workshops, seminars and conferences on information resource management	[ ]
(e)	Application of Security measures on relevant information	[ ]
(f)	Training and application of ICT and Computerization of relevant information in all departments of the MPR	[ ]
(g)	Store information on backup tapes, flash drives, videotext (CD/VCD/DVD), microfilm, macrofitch, diskette and disc	[ ]
(h)	Local Area Network (LAN) should be properly put in place in the MPR in order to manage information properly	[ ]
(i)	Others please specify……	

26th JANUARY, 2015
CORRECTED COPY