

# RESOURCE SHARING THROUGH LIBRARY CONSORTIUM: AN ASSESSMENT OF THE CONSORTIUM OF ACADEMIC AND RESEARCH LIBRARIES IN GHANA (CARLIGH)

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## Abstract

*The study provides an assessment of the operations and activities of the Consortium of Academic and Research Libraries in Ghana (CARLIGH) since its inception in 2004. It examines the viewpoints of members from the institutions that make up the consortium on issues such as knowledge about the activities of the consortium, governance and management of the consortium, information resource sharing especially the provision of e-resources to member libraries/institutions. The study also assessed member's views about the content or subject coverage and cost sharing models of the e-resources as well as the effects of CARLIGH e-resources on teaching, learning and research in the member institutions. It concludes with some recommendations on the way forward for the consortium.*

## INTRODUCTION

The history of library cooperation and information sharing in Ghana dates back to 1989 when an attempt was made to establish a formal network among the libraries of the various sectors in Ghana to share information under the Ghana National Scientific and Technological Information Network (GHASTINET) project coordinated by the then National Science and Technology Library and Information Centre (NASTLIC) of the Council for Scientific and Industrial Research (CSIR). The Danish government sponsored Ghana Inter-Library Lending and Document Delivery (GILLDDNET) project which involved six beneficiary libraries made up of the public universities and the CSIR led to the emergence and development of Information Communication Technology (ICT) infrastructure and the use of e-resources in the beneficiary libraries. The GILLDDNET project also helped to establish a formal network among the university and research libraries in Ghana.

The need to sustain and build upon the achievements and successes of the GILLDDNET project led to the establishment of the Consortium of Academic and Research Libraries in Ghana in August 2004. CARLIGH now at its tenth (10) year of

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existence has brought together thirty three Ghanaian university and research libraries for the purpose of sharing information resources.

The Consortium of Academic and Research Libraries in Ghana (CARLIGH) has been at the centre of promoting information sharing among the academic and research libraries in Ghana. Over the ten years of existence CARLIGH has provided training and technical assistance to the member libraries/institutions. It has also facilitated the provision of access to e-resources to the member institutions.

For many, CARLIGH has done very well in fulfilling some of its objectives. However, there is no scientific research or assessment of the activities of CARLIGH to establish in clear terms the effects of CARLIGH activities on the operations and the provision of effective and efficient library services in the member institutions. Considering the significance of CARLIGH to its member institutions, there is the need for this kind of periodic assessment to establish whether the consortium is living up to expectation or otherwise.

The main objective of this study is to conduct an assessment of the activities of CARLIGH especially the provision of electronic information resources to the member libraries/institutions. The specific objectives of the study are;

- (1) To examine the existing situation or state of the consortium.
- (2) To investigate the level of usage of the e resources provided through CARLIGH to the member institutions.
- (3) To determine the level of satisfaction with regards to the governance and management of the consortium as well as the cost-sharing model.
- (4) To determine the level of satisfaction with regards to the subject coverage or the content of the e resources and the impact of CARLIGH on teaching, learning and research.
- (5) To ascertain the challenges encountered by the member libraries/institutions.
- (6) To make recommendations on the future operations and directions of the consortium.

## **METHODOLOGY**

The study made extensive use of quantitative research design and in some situations qualitative research design was used, interviews were conducted in some instances to seek further clarifications on some of the answers provided by the respondents. The population of the study was selected from thirteen (13) out of the thirty-three (33) member institutions using simple random sampling technique.

The selected institutions are : University of Ghana - Accra, Presbyterian University College-Abetifi, Methodist University College Ghana- Accra, Catholic

University College-Sunyani, Regent University College-Accra, Ghana Institute of Management and Public Administration (GIMPA) - Accra, University of Cape Coast-Cape Coast, Ashesi University College - Accra, Wisconsin University College- Accra,, University of Education - Winneba, Accra Polytechnic - Accra. CSIR-INSTI-Accra, and Central University College-Accra.

The selection of the institutions for the study took into consideration a balance between public and private university/research institutions, the total staff/students as well as accessibility and cooperation received from the institutions. The respondents consisted of Librarians, Lecturers, Students, Information Technology (IT) and Administrative Staff. The respondents were selected on simple random sampling basis.

In all a total of 150 well structured open and closed questionnaires were administered. Out of which 126 completed questionnaires were returned. 30 interviews were conducted to seek further clarifications. Descriptive statistics such as frequency counts, percentages, mean, and bar charts were used to present and analyze data. The Statistical Package for Social Sciences (SPSS) and MS Excel packages were used to analyse data.

### **CONCEPTUAL ISSUES**

A consortium refers to a group of organizations that come together to fulfill a common objective that usually requires cooperation and the sharing of resources. Woodsworth, (1991) define a library consortium as an association comprised of several member libraries. It has its own structure of governance and can act as a corporate body on behalf of its members. Library consortium vary in their type, goals, structure, membership and funding.

A library consortium, also involve an agreement between a group of libraries to undertake an enterprise beyond the resources of any one member library. It is broadly described as a group of libraries coming together with some agreement to satisfy each other user information needs.

The activities of a library consortium include, cooperative collection development, information sharing through inter-library lending and the provision of access to electronic information resources. It also involves collaborative building and maintenance of technical infrastructure, exchange of human resources, delivery of services, and establishing institutional repositories.

Academic library consortia are now integrated into library operations and playing an important role in libraries abilities to acquire the resources they need and in turn serve their respective communities. Consortium activities appear to be affecting budget decisions. Hundreds of local, regional and national consortia are operational throughout the world (Tonta, 2001).

There are various types of library consortium such as consortium of multi libraries, consortium of the same libraries, local level consortium, state level consortium, national level consortium, regional and international consortium. One major goal of a library consortium is to facilitate resource sharing through union catalogues and inter-library loan agreement and collective subscription to electronic information resources at reduced cost.

The main objectives of library consortium include the following;

- (1) To promote and support adoption of standards in library operations.
- (2) To create and provide databases for institutions that provide on-line information services.
- (3) To coordinate with other regional, national and international networks for exchange of information and documents.
- (4) To generate new services and improve efficiency in library operations.
- (5) To facilitate the general professional development of staff.
- (6) To support automation and networking of libraries.
- (7) To facilitate digitization and preservation of information resources.

Moulton & Fink (1975), suggests the following as the components of a library consortium:

- (a) Composite of resources (e.g. books, journals, audiovisual materials, personnel and space).
- (b) Multi-institutional environment (e.g. The institutions that come together through cooperation or member libraries in the consortium).
- (c) Leadership - that is the management of the consortium, it can come from within the group or from an independent agent (eg consortium directors).
- (d) Activities - activities of the consortium are its most visible components because the activities translate the concepts of cooperation into operational reality; they are of greater interest to the users involved in the consortium programmes. It involves inventories, interlibrary loan, reference services and development of policies and procedures.

The advantages of library consortium include the following:

1. As a group member, libraries have a combined set of resources that are greater than the resources of a single library.
2. It allows the pool of resources to leverage greater control over the market.
3. Consortia enable continuous improvement of services through the enhancement of collections and access to resources.
4. It brings about discounted/subsidized prices for equipment, software and information resources.
5. It supports continuous education and training among staff of member libraries.

6. It supports reciprocal borrowing and ability to obtain quick delivery of materials from member libraries.
7. It allows the sharing of integrated library systems.
8. It facilitates project planning and management.

There are many challenges encountered by library consortium. These include the following;

- (1) Lack of awareness among the libraries and/ or library authorities about the benefits of belonging to a library consortium.
- (2) Unwillingness of some libraries to share the burden of resource sharing.
- (3) Uneven development of libraries of different sectors and the slow progress of library automation.
- (4) Inability of many libraries to meet the minimum commitment required to join a consortium due to financial and infrastructural constraints.
- (5) Poor bibliographical control of the holdings of the libraries.
- (6) The slow pace of decision - making as consortia are mostly centralized.
- (7) The challenge of selecting, evaluating, acquisition, maintenance and provision of access to e-resources in accordance with business license terms.
- (8) Difficulties in monitoring the use of resources and dealing with restricted access.
- (9) The challenge of budget control and timely renewal or termination of subscribed resources.
- (10) The challenge of ensuring timely access to the right users.
- (11) The lack of standardization of various databases.
- (12) The problem of pricing and cost-sharing.
- (13) Legal issues with negotiation, agreements and licensing issues.

There are various pricing model for consortium resources listed as follows;

1. Print + Electronic model.
2. Electronic model.
3. Document delivery and pay-per view model.
4. Full time equivalent model.
5. Concurrent user's model.
6. Perpetual access Vs annual lease model.
7. Shared-budget model.
8. Back-file access model.
9. Centrally funded model.

### **E-resources and Resource Sharing**

Electronic resources represent an increasingly important component of the collection building activities of libraries.

Electronic resources are defined as information resources which requires computer access or any electronic product that delivers a collection of full text databases. In other words, e-resources refer to those materials that require computer access whether through a personal computer, mainframe or hard mobile device. They may either be accessed remotely via the internet or locally e.g. e-books, e-journals, numeric or statistical databases, images and audio visual resources.

Libraries have long been procuring information resources in the traditional print format, but in recent time, these resources are available in various other formats such as, audio-visual, online, digital, CD-ROM etc.

According to Rahman, (2006), the aim and objectives of information resource sharing is to ensure better access to information resources and to save money and avoid duplication of efforts.

Martey, (2002) categorized the benefits of information sharing into three i.e benefit to individual library users, benefit to the institutions and benefit to the nations. For instance, the study states that information sharing enhances service quality and access to information for the individual library users. The institution also benefit in the form of reduce cost of subscription and increase cooperation. While the nation benefit from information sharing activities by way of increase growth of national information society and standardization of library services across the country.

The following are some of the advantages of using e resources;

- (i) Ease of use - e resources provides up-to date, flexible and convenient access to information both on-site and remote site.
- (ii) Reliability - e resources are very reliable source of information.
- (ii) Affordability - apart from the initial cost of infrastructure many people believe that e resources are more affordable.
- (iv) Multi - access - a network product can provide multiple access points to information.
- (v) Speed - electronic resources is a lot more quicker to search for information.
- (vi) Functionality - e resources allows the user to do a strategic and effective search e.g. analyze content before the search.
- (vii) Content - The e-resources can contain a vast amount of information but more importantly the materials consist of mixed media eg images, video, audio, animation etc.

Library information sharing involves the following activities;

1. Cooperative collection development among member libraries.
2. Cooperative processing of information resources acquired through the consortium. e.g. Cataloguing.

3. Creation of virtual digital library covering all the information resources available to member libraries.
4. Compilation of bibliographic and/or full text databases holdings of the member libraries (both print and non-print).
5. Sharing of information resources (both traditional and digital networks) and document delivery services as the case may be.
6. Reciprocal borrowing by the member libraries of the consortium.
7. Digitization of valuable and rare collections of member libraries.
8. Support of member libraries in setting up institutional repositories eg e-print, archives, electronic thesis collection etc.
9. Developing a common interface to catalogues, databases and portals.
10. Sharing of storage facilities thereby minimizing expenditure on space.
11. Sharing of human resources at institutional, local, regional, national and international levels.
12. Creating information technology infrastructure.
13. Facilitating joint preservation and archiving activities for print and digital materials.
14. Initiating and supporting research projects of common interest.
15. A collective promotion and marketing of library services.

The following are some of the notable changes in the library environment;

- (i) Information explosion.
- (ii) Authentic and faster access to scholarly information.
- (iii) Information and communication technology has given birth to electronic information resources.
- (iv) E-resources are playing significant role in the creation, transmission and storage of information.
- (v) Concept of knowledge pool, and knowledge management.
- (vi) Libraries can only afford resources through cooperative efforts, sharing of resources has therefore become a necessity due to the decreasing ability to develop sufficient independent collections.

### **Background of the Consortium of Academic and Research Libraries in Ghana (CARLIGH)**

The Consortium of Academic and Research Libraries in Ghana (CARLIGH) is a non-profit association of academic and research libraries in Ghana.

CARLIGH was established in August 2004 with the aim of ensuring a continued availability of library information resources to the academic and research community in particular and the general public. At present, there are thirty-three member institutions. The Consortium is open to the following categories of libraries in Ghana: public and

private university libraries, polytechnic, College of Education, Research, and Special libraries.

The vision of CARLIGH is to become a centre of excellence in providing recorded knowledge in all formats for teaching, learning and research activities in Ghana and the mission is to employ collective information technologies available and staff capabilities to improve teaching, learning and research including life-long learning in member institutions and by extension in Ghana and do all such like things as to ensure the achievement of CARLIGH's objectives.

The following are the specific objectives of CARLIGH;

1. To promote and facilitate the sharing of library and information resources among member institutions and to support teaching, learning and research activities through acquisition, developing and archiving information in print and electronic format/media.
2. To optimize the shared use of the resources of member institutions and to exchange scholarly library and information services on a more formal basis within the network.
3. To develop and use integrated and compatible computer-based systems with reciprocal users access.
4. To encourage cooperative collection building in both electronic and non electronic resources in order to avoid unnecessary duplication.
5. To seek additional funding from sources other the member institutions.
6. To promote the digitization of local resources.
7. To promote sustainable staff development programmes among member libraries.
8. To promote inter-library lending and document delivery among member libraries and elsewhere.
9. To make available ICT and related expertise and promote the use of appropriate ICT technology in member libraries.
10. To establish and maintain links with organizations and agencies with similar objectives worldwide.

CARLIGH has a well structured governance and management system. The consortium is governed by an Advisory Board which consists of representatives of Vice Chancellors and Heads of Member Institutions. It also includes representative of National Council for Tertiary Education (NCTE), Director General of CSIR. The Chairman of the governing board, Chairman of the management committee, and representative of the Ghana Education Trust Fund (GETFUND).

There is also a governing board which consists of the Head Librarians of the member institutions. The Management Committee also consists of elected members



from the governing board with at least one representation from each type of library eg public, private, polytechnic, special and College of Education. CARLIGH also has a permanent national secretariat responsible for the day to day management of the consortium.

### **Collaborations**

CARLIGH work with partner organizations including International Network for the Availability of Scientific Publications (INASP), EIFL and the Association of Africa Universities (AAU), who help to facilitate access to information resources and also assist in capacity building.

### **Achievements**

Over the 10 years of existence CARLIGH has achieved the following;

- (1) CARLIGH has facilitated stable and global access to electronic information resources to the member institutions.
- (2) It has supported capacity building among member institutions through the provision of training programmes for librarians, faculty members, editors of internal journals and IT staff.
- (3) CARLIGH has also assisted some member institutions to set up Institutional Repositories.
- (4) It has also provided technical advise to member libraries on a number of issues relating to Librarianship and information management.

## **RESULTS AND DISCUSSION**

This section provides analysis of the data collected on the study. The data analysis is on the following indicators, knowledge of CARLIGH, usage of e-resources, governance and management of CARLIGH, subject coverage of e-resources, impact of CARLIGH e-resources on teaching, learning and research as well as challenges and recommendations from the member institutions point of view. Frequency distribution tables, cross-tabs, bar charts and other statistical diagrams are used to clarify results. Most of these tables and charts are output from SPSS and MS Excel.

A total of 126 questionnaires were received from individuals across the 13 selected member institutions of CARLIGH. There was high response rate to most of the questions asked. This of course reduce the response error and makes the results of the study adequate. Majority of the respondents were from educational institutions. The respondents comprise of librarians (32.8%), Lecturers & Researchers (19.2%), Administrative and IT staff taking 10.4% and (8.8%) respectively.

The respondents were mainly from University of Ghana (11.9%), Methodist University College (11.1%), University of Cape Coast (10.3%) and a couple of other institutions as can be seen in the bar chart presented in figure 1.

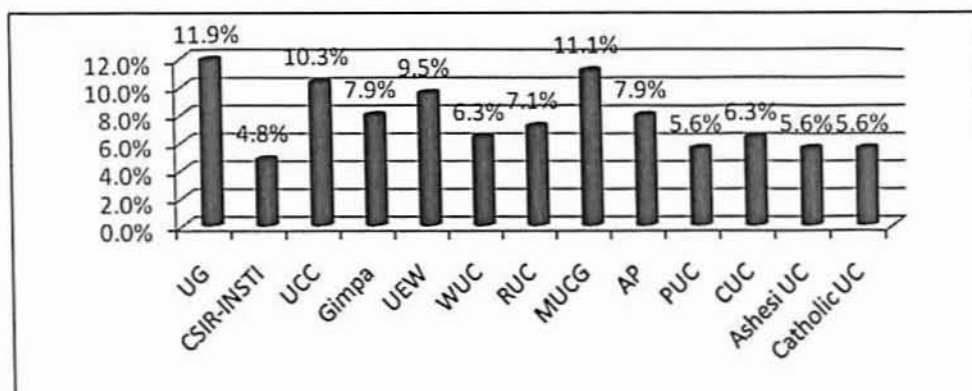


Fig. 1: Bar Chart Showing the Percentage of Responses from Various Institutions Called into the Survey

Table 1: Institution by Respondents Crosstab

Institution	UG	Count	Users					Total
			Librarian Researcher	Lecturer/	Student	IT Staff	Administrative Staff	
		% within Institution	53.3%	33.3%	13.3%	0.0%	0.0%	100.0%
	CSIR-INSTI	Count	5	0	0	1	0	6
		% within Institution	83.3%	0.0%	0.0%	16.7%	0.0%	100.0%
	UCC	Count	7	1	2	1	1	12
		% within Institution	58.3%	8.3%	16.7%	8.3%	8.3%	100.0%
	Gimpa	Count	0	1	5	3	1	10
		% within Institution	0.0%	10.0%	50.0%	30.0%	10.0%	100.0%
	UEW	Count	3	4	4	1	0	12
		% within Institution	25.0%	33.3%	33.3%	8.3%	0.0%	100.0%
	WUC	Count	2	2	3	1	0	8
		% within Institution	25.0%	25.0%	37.5%	12.5%	0.0%	100.0%
	RUC	Count	3	3	3	0	0	9
		% within Institution	33.3%	33.3%	33.3%	0.0%	0.0%	100.0%
	MUCG	Count	5	3	3	0	3	14
		% within Institution	35.7%	21.4%	21.4%	0.0%	21.4%	100.0%
	AP	Count	1	2	3	1	3	10
		% within Institution	10.0%	20.0%	30.0%	10.0%	30.0%	100.0%
	PUC	Count	1	1	3	1	1	7
		% within Institution	14.3%	14.3%	42.9%	14.3%	14.3%	100.0%
	CUC	Count	3	0	2	0	3	8
		% within Institution	37.5%	0.0%	25.0%	0.0%	37.5%	100.0%
		% within Users	7.3%	0.0%	5.6%	0.0%	23.1%	6.4%
		% of Total	2.4%	0.0%	1.6%	0.0%	2.4%	6.4%
	Ashesi UC	Count	3	1	2	1	0	7
		% within Institution	42.9%	14.3%	28.6%	14.3%	0.0%	100.0%
	Catholic UC	Count	0	1	4	1	1	7
		% within Institution	0.0%	14.3%	57.1%	14.3%	14.3%	100.0%

It can be seen from the above table that more Librarians (83.3%) from CSIR-INSTI responded to the survey than any other institution. Similar observations can be made for UCC and UG. In other observations, it can be noticed that more students in Catholic University (57.1%), GIMPA (50.0%) and PUC (42.9%) responded to the survey more than any other respondents in the remaining institutions. Lecturers & Researchers were similarly high in response from UEW (33.3%) and RUC (33.3%) than any other respondents in those institutions.

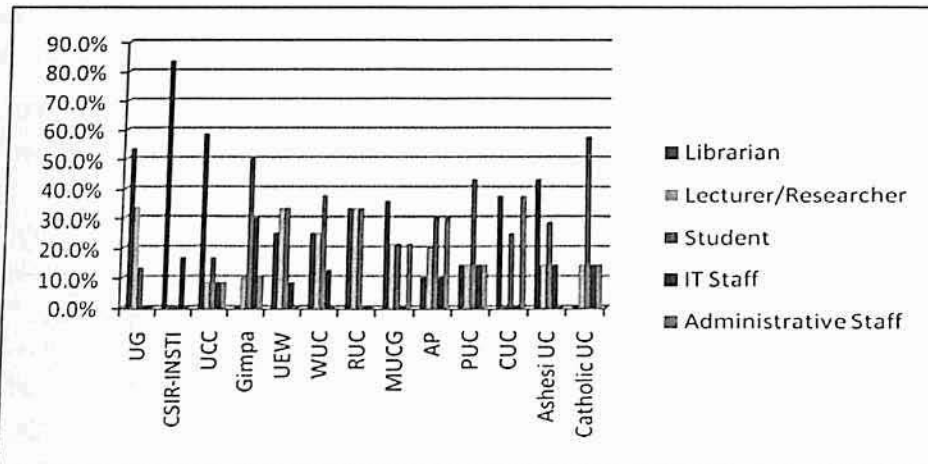


Fig. 2: Bar chart showing level of responses by individual groups across the institutions

Also majority of the respondents have worked in their respective institutions for not more than 5 years (45.2%) and identified the existence of a library in their respective institutions. However, the level of usage of the library among the respondents varies. Very few (15.9%) occasionally use the library and the vast majority (cumulative percent of 83.3%) often use the library.

### Knowledge of CARLIGH

As illustrated in Figure 2.0 and Table 2.0 below, over whelming majority (85.7%) of the respondents affirmed their knowledge of the CARLIGH. Out of this percentage, 82 respondents representing (76.6%) got to know of it through the library (13.10%) and (6.50%) got information on it through colleagues and seminars/workshops/conferences respectively.

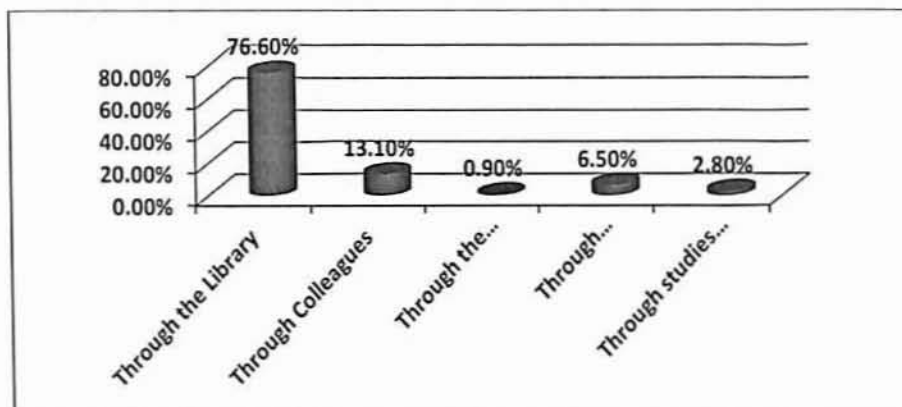


Fig. 3: Bar Chart showing how th respondents got to know about CARLIGH

Table 2: How did you get to know about CARLIGH.

	Frequency	Percent	Cumulative Percent
Through the Library	82	76.6	76.6
Through Colleagues	14	13.1	89.7
Through the website	1	.9	90.7
Through Seminar/Workshop/Conference	7	6.5	97.2
Through studies at the Lecturers	3	2.8	100.0
Total	107	100.0	

It is however sad to note that a valid response of about (53.3%) indicated that CARLIGH is not well publicized in their respective institutions as illustrated in Figure 4.0. Nevertheless a vast majority of the respondents (79.8%) indicated that they were involved in its operations/management/ use of e-resources.

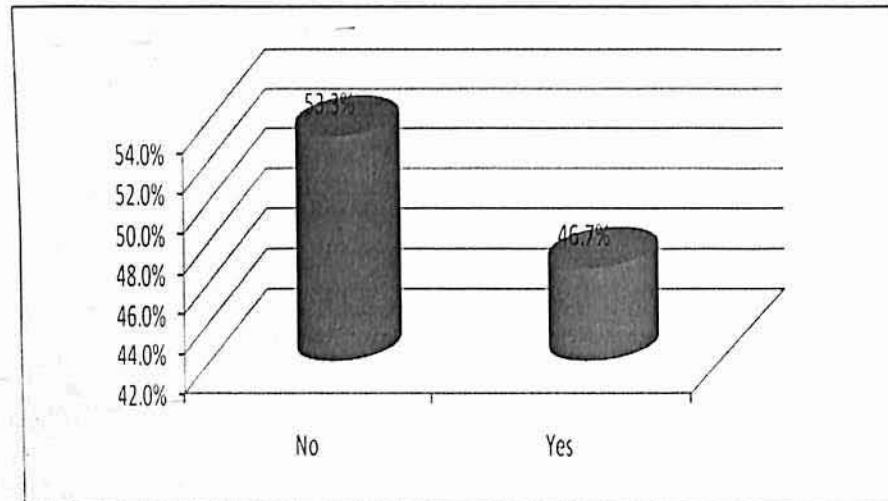


Fig. 4: Bar Chart showing Acknowledgement of how much CARLIGH has been Publicized

The respondents also suggested five means by which they think CARLIGH could be publicized, as illustrated in Table 3.0 and Figure 5.0 (29.8%) respondents suggested presentations at workshops/seminars/conferences and (27.7%) advertisement in the print media. (17.0%) also suggested radio/television advertisements.

Table 3: Ways by which CARLIGH can be Publicized

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Workshops/Seminars/ Conferences	14	29.8%	29.8
	Print media	13	27.7%	57.4
	Use of CARLIGH stickers	2	4.3%	61.7
	Radio/television advertiment	8	17.0%	78.7
	Student Notice Board	5	10.6%	89.4
	Training of Users	5	10.6%	100.0
	Total	47	100.0%	
Missing	System	17		
Total		64		

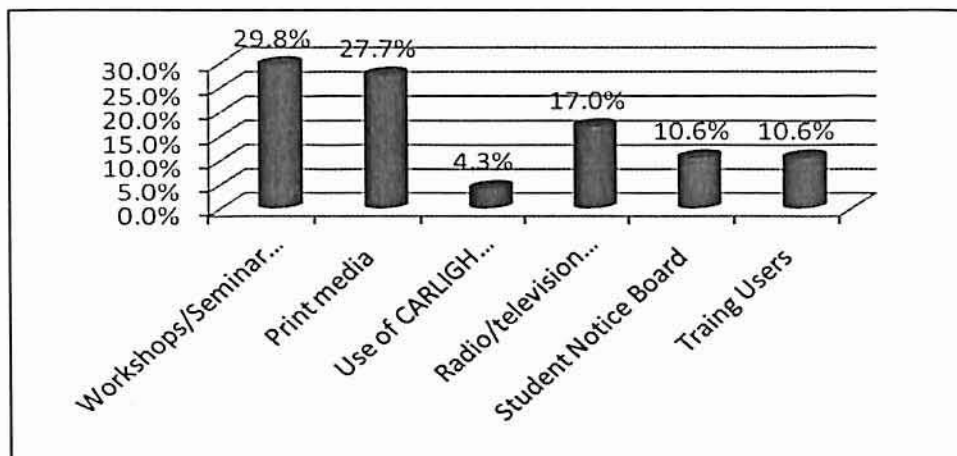


Fig.5: Bar Chart showing how CARLIGH should be publicized

### Level of usage of CARLIGH e-resources

Ninety-nine (99) respondents indicated their involvement in the activities and usage of CARLIGH resources. The librarians forming about (38.1%), were more involved in the management and promotion of the use of e-resources. This was followed by students (25.7%) who are end-users of e-resources. See the bar chart in figure 6.0 below for the distribution of the level of involvement and use of CARLIGH e-resources.

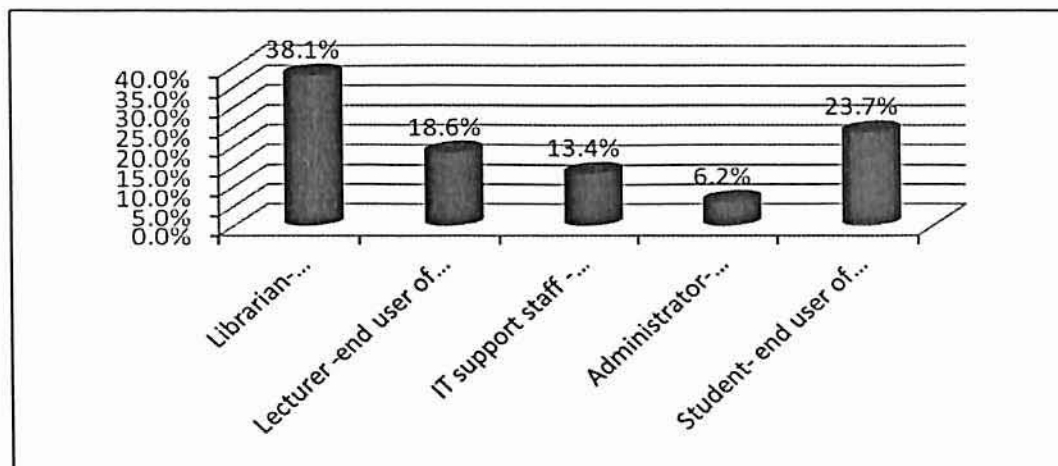


Fig. 6: Bar Chart showing the Level of Involvement of Respondents in the use of E-resources

In all, (82.4%) affirmed that, they were aware of the e-resources that are provided by CARLIGH to their respective institutions. Table 4.0 below gives a list of databases that were mentioned by the respondents.

**Table 4:** List of Databases Available and Often Use

Databases	Responses		
	N	Percent	Percentages
IEEE	24	7.2	31.6
SAGE	43	12.8	56.6
EBSCOHOST	56	16.7	73.7
EMERALD	71	21.2	93.4
PROJECT MUSE	13	3.9	17.1
JSTOR	28	8.4	36.8
WILEY	23	6.9	30.3
OXFORD UNI PRESS	10	3.0	13.2
BRITANNICA	9	2.7	11.8
HIMARI	2	.6	2.6
IMF	2	.6%	2.6
AGORA	2	.6	2.6
AJOL	5	1.5	6.6
SCIENCE DIRECT	13	3.9	17.1
WORLD BANK	2	.6	2.6
ELSEVIER	28	8.4	36.8
Total	335	100.0	440.8

Emerald, Ebscohost and Sage with percentage responses of (21.2%), (16.7%) and (12.8%) respectively were the most popular among the many databases. Besides getting access to journals from the databases, two important benefits that member libraries of the various institutions derived from CARLIGH are opportunity to share resources with other academic libraries (58.7%), training (33.3%) and technical assistance (8.0%). Figure 7.0 below illustrates these benefits.

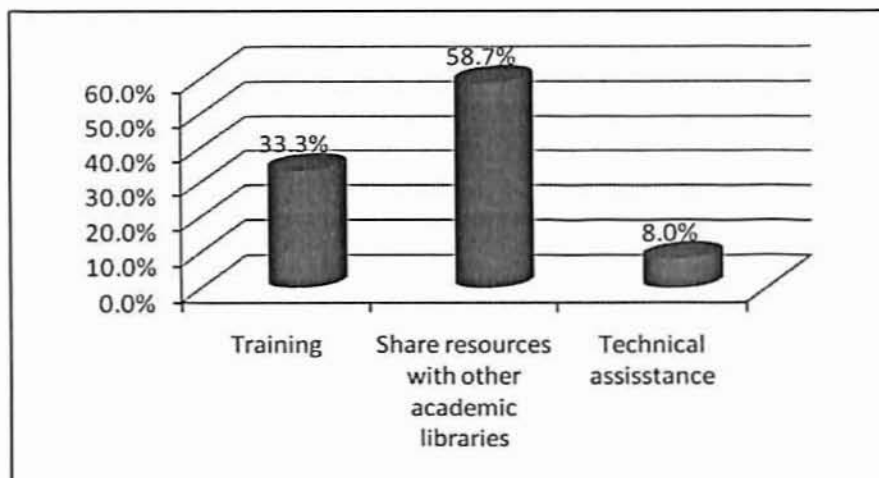


Fig. 7: Bar Chart showing benefit derived from joining CARLIGH

### Assessment of governance and management of CARLIGH

With regards to respondents assessment of the state of the consortium, the result as illustrated in Figure 8.0 shows that members of CARLIGH are satisfied with the management of CARLIGH, according to them, through CARLIGH, most of the libraries (60.0%) are now fully automated and about (31.2%) are partially automated. This has enhanced the governance and effective management of the libraries and most importantly the Consortium has also made e-resources available to member libraries at reduced cost.

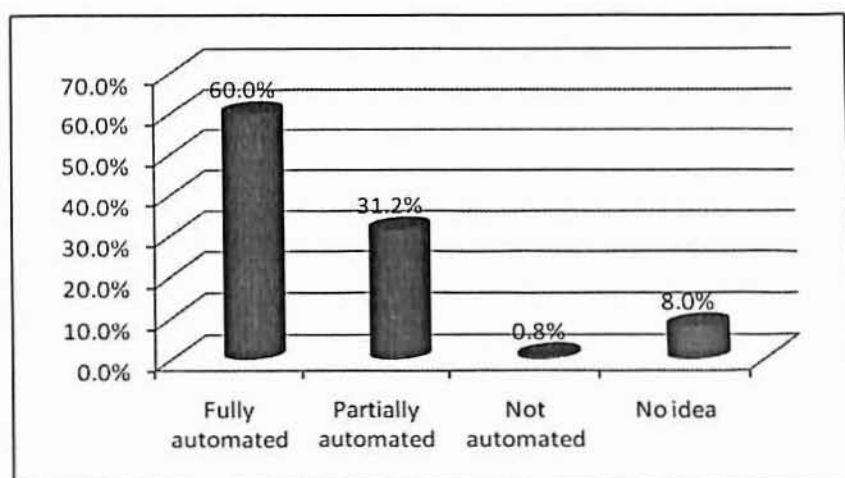


Fig. 8: Bar Chart showing the Automation level of Libraries



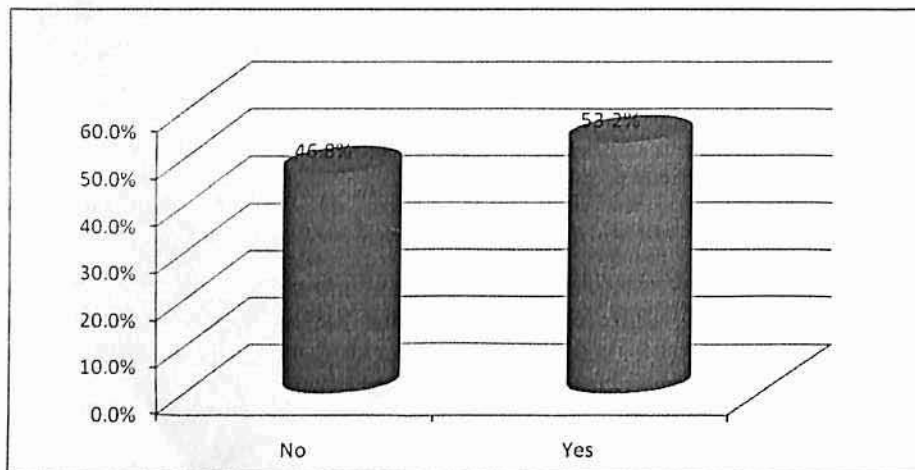
The study also established that about (98.4%) of all computers in member libraries of the institutions under study have internet connectivity. This can be seen in Table 5.0 below.

**Table 5:** Internet Connection to the Library/Institution

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No	2		1.6%	1.6
	Yes	123		98.4%	100.0
	Total	125		100.0%	
Missing	System	1			
Total		126			

### Type of Training Received

With regards to the type of training received by respondents, a little more than half of the valid respondents indicated that they have received training in the management and use of e-resources. However librarians have been the highest beneficiaries of the CARLIGH supported training programmes. Figure 9 below illustrates the Responses on Whether the Respondents have Received any Training from CARLIGH



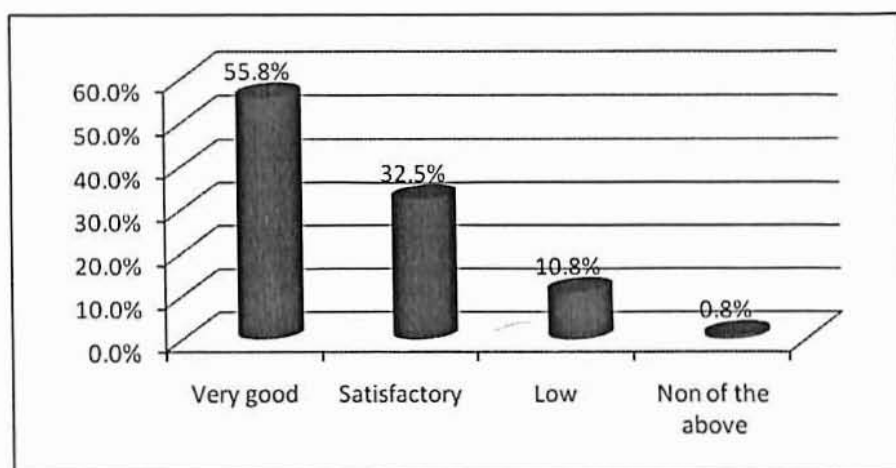
**Figure 9.0** Bar Chart showing the training received on the use of e resources

Prominent among the training received include "searching with boolean logic indicators", "information retrieval skills", "e-resources marketing" and a number of them as listed in the table 6.0 below.

**Table 6:** Type of Training Received

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid				
Searching with Boolean logic indicators	13	19.7	23.2%	23.2
Information retrieval skills	11	16.7	19.6	42.9
E-resource marketing Workshops/Seminars/Conferences	5	7.6	8.9	51.8
System and Network Admin	24	36.4	42.9	94.6
On-line journal management	2	3.0	3.6	98.2
Total	1	1.5	1.8	100.0
Missing System	56	84.8	100.0	
Total	10	15.2		
	66	100.0		

According to the respondents the training received from CARLIGH has increased their competence in the use of e-resources. As illustrated in Figure 10.0, majority of the respondents (55.8%) describes their level of competence in the use of e-resources as very good, (32.5%) said it is satisfactory and just a few said it was low (10.8%).

**Fig. 10:** Bar Chart showing Competence in the use of E-resources

#### Assessment of subject coverage and content of the e-resources

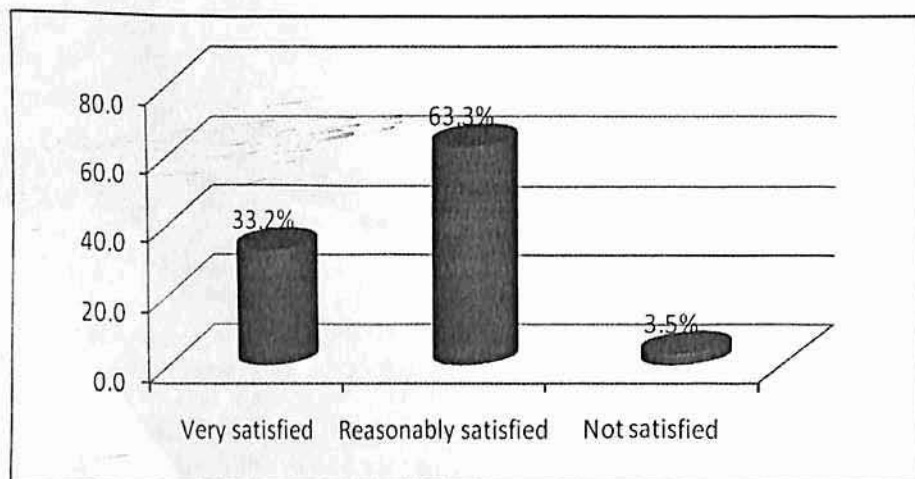
The result shows that majority of the users are pleased with the content or subject coverage, management and cost-sharing model of CARLIGH. About (80%) of the valid respondents indicated so. 28 respondents representing (32.6%) and 58

respondents representing (67.4%) expressed their level of satisfaction on the subject coverage or content of CARLIGH e-resources as very satisfied and reasonably satisfied respectively.

On governance and management of CARLIGH, the respondents felt reasonably satisfied (61.2%). A similar response can be said of the cost-sharing model for the e-resources subscription. The prevailing cost-sharing model is that, the total cost of e-resources is shared equally among the member institutions. Only (8.2%) were dissatisfied to this regard. A summary of these variables are presented in table 7.0 and Figure 11.0 below.

**Table 7:** Level of Satisfaction with Regards to Subject Coverage, Governance and Cost-sharing Model

S/N	Variables	Responses	Very	Reasonably	Not	Total
				satisfied	satisfied	satisfied
1.	Level of satisfaction on subject coverage/content of CARLIGH e-resources	Frequency %	20 32.6	58 67.4	0 0.0	86 100.0
2.	Level of satisfaction on governance or management of the consortium (CARLIGH)	Frequency %	31 36.5	52 61.1	2 2.4	85 100.0
3.	Level of satisfaction on the cost sharing of price model for the e-resources subscript	Frequency %	26 30.6	52 61.2	7 8.2	85 100.0



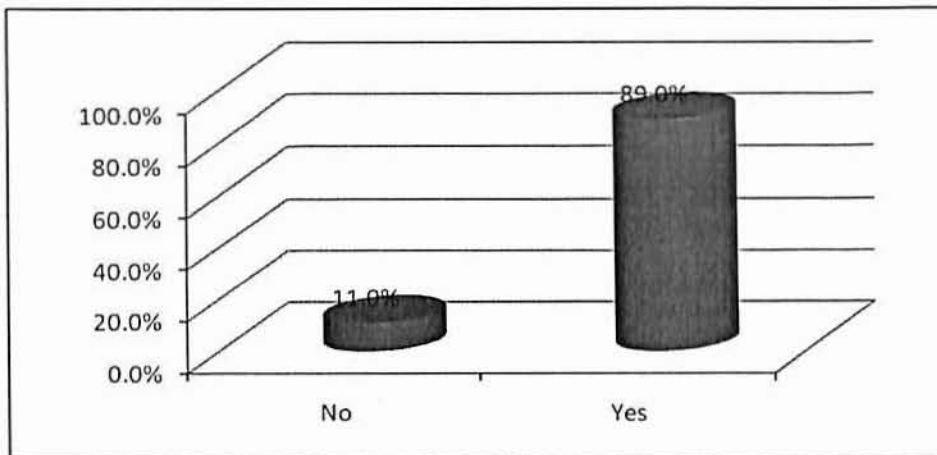
**Fig. 11:** Bar Chart Summarizing the level of Satisfaction on three Variables; Coverage, Governance / Management and Cost-sharing Model

### Impact of CARLIGH e-resources on Teaching, Learning and Research

According to the result some positive gains have been made with the introduction of CARLIGH. The respondents confirmed that CARLIGH facilitated e-resources has impacted positively on teaching, learning and research in the institutions under study. As illustrated in Table 8.0, and Figure 12.0 out of 109 respondents on this question, 97 respondents representing (89.0%) affirmed the usefulness and positive impact of CARLIGH activities on teaching, learning and research.

**Table 8:** Has the Introduction of CARLIGH E-resources Changed the Nature of Teaching, Learning and Research in your Institution?

		Frequency	Percent Valid	Percent	Cumulative Percent
Valid	No	12	9.5	11.0	11.0
	Yes	97	77.0	89.0	100.0
Total		109	86.5	100.0	
Missing	System	17	13.5		
Total		126	100.0		



**Fig. 12:** Bar Chart show Responses on the Impact of CARLIGH E-resources on Teaching, Learning and Research

### Nature of the Impact

Table 9 list the nature of the impact on teaching, learning and research

**Table 9:** Change Nature of Teaching Research Learning Frequencies

		Responses		Percent of Cases
		N	Percent	
Change_Nature_of_Teaching_Research_Learna	Provide wide range of resources on my course	70	18.8	72.2
	Assisted in preparing lectures notes.	57	15.3	58.8
	Expedited the research process	85	22.8	87.6
	Enhanced preparation for examination	52	13.9	53.6
	Assisted in completion of assignment on time	49	13.1	50.5
	Enhanced my IT skills	60	16.1	61.9
Total		37	100.0	384.5
		3	%	%

### Challenges faced by users

Table 10 and Figure 13 below list some of the challenges hindering the effective operations and use of the consortium resources.

**Table 10:** Problems associated with the management/use/sharing of CARLIGH E-resources

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Inadequate subject coverage of databases	8	6.3	14.5	14.5
	Inadequate training	7	5.6	12.7	27.3
	Low publicity	3	2.4	5.5	32.7
	Lack of accessibility	20	15.9	36.4	69.1
	Unstable internet services	5	4.0	9.1	78.2
	Never heard of it	1	.8	1.8	80.0
	Inadequate funding	7	5.6	12.7	92.7
	Inadequate computers/lab tops	4	3.2	7.3	100.0
	Total	55	43.7	100.0	
Missing System		71	56.3		
Total		126	100.0		

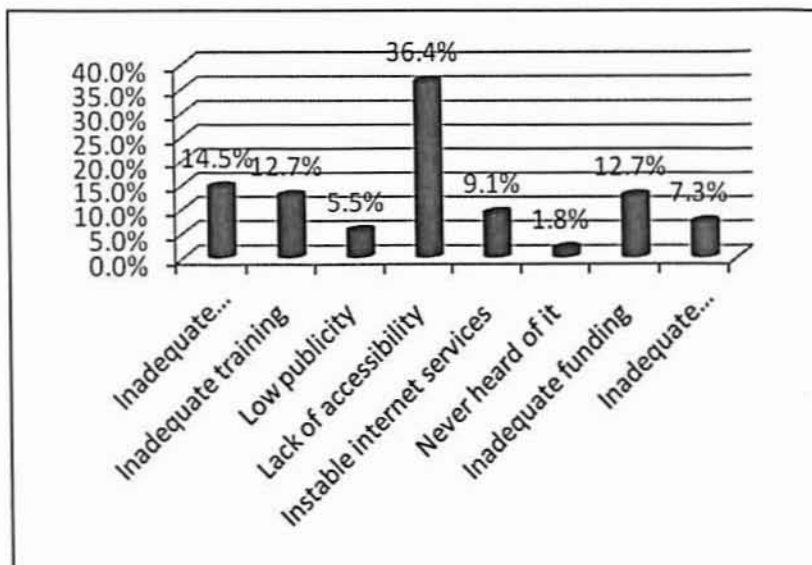


Fig. 13: Bar Chart showing the Problems Encountered by CARLIGH Members

### Suggestions for Improvement

Table 11 and Fig. 14 also illustrates the suggestions from the respondents on how the future operations of CARLIGH and use of the e-resources can be enhanced.

Table 11: Suggestions for Improvement

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid Expand subject coverage of databases	7	5.6	17.5	17.5
Regular training	13	10.3	32.5	50.0
Improved publicity	7	5.6	17.5	67.5
Unified identification card for patrons/clients to ease access	3	2.4	7.5	75.0
Consortium should work hard to reduce cost of databases	6	4.8	15.0	90.0
simple updating methods	2	1.6	5.0	95.0
Provide articles in texts	2	1.6	5.0	100.0
Total	40	31.7	100.0	
Missing System	86	68.3		
<b>Total</b>	<b>126</b>	<b>100.0</b>		

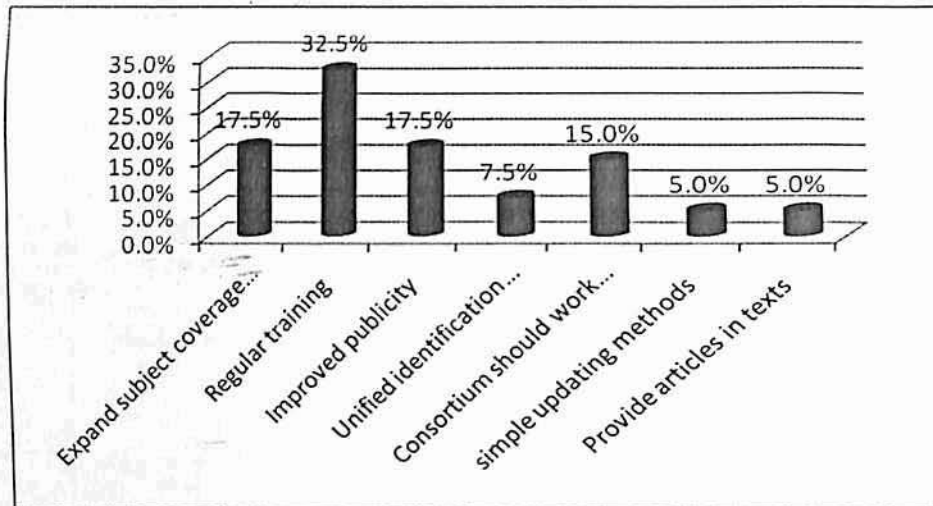


Fig. 14: Bar Chart Showing Suggestions from the Member Institutions

## CONCLUSION AND RECOMMENDATIONS

The study has established that indeed CARLIGH operations and activities has affected the provision of library and information services in the member libraries/institutions. Apart from the benefit of CARLIGH providing training and technical assistance to member libraries and institutions, it has been at the fore front of providing access to electronic information resources in the form of databases at affordable prices. The availability of these resources has made tremendous impact on teaching, learning and research activities in the member institutions.

The study also affirmed member institutions satisfaction of the subject coverage of the e-resources as well as the management of the consortium. Members are equally satisfied with the cost-sharing model for the e-resources. There is however the need for the governing board and management team to work together with the member institutions on the challenges of the consortium, for instance the subject coverage of the e-resources should be expanded to include other relevant subject areas that are not covered. The member institutions should also be involved in all decisions regarding the selection of databases for subscription. It is equally important to base the selection of these databases on the information needs of the ultimate end users of these resources from the various member institutions.

With regards to the problem of inadequate funding, the study established that the consortium has not done enough in soliciting external funding for the consortium. It is therefore recommended that the consortium should, as a matter of urgency develop proposals to donor funding agencies including CARNEGIE and Ghana education Trust Fund (GETFUND) to support the activities of the consortium.

The suggestion for regular training should also be taken very seriously, even though the study affirmed that, CARLIGH provides some sort of training for members, it is recommended that these training programmes should not only be regular but be based on the training needs of member institutions. The training should also be extended to the end users of CARLIGH e-resources.

In conclusion, considering the high cost of library infrastructure and information resources, library consortium still remains one of the most important ways and means of pooling the limited resources of libraries together for the common benefit of the entire group. CARLIGH is therefore one of the most important organizations that will help promote library and information services in Ghana. Everything possible should be done to sustain the consortium.

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