

**EXAMINING GHANAIAN UNIVERSITY
LIBRARIES' ROLES IN PROMOTING
RESEARCH OUTPUT**

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ABSTRACT

University libraries have the responsibility of providing adequate information to satisfy the needs of a well-defined specialized clientele, namely faculty, researchers, administrators and students. To expand the literature on the role of university libraries in supporting research output in Ghana's academia, this paper focuses on libraries' role in promoting university research output. The study employs quantitative methodology. Using the Survey design, one hundred and fifteen (115) respondents comprising of faculty and postgraduates within the University of Ghana (UG) were sampled and examined on the university library's role in promoting research. Questionnaires were the only research instrument used for data collection. The inferential statistics (Chi-square and Pearson Correlation Matrix) tool were used to generate relationships for dependent and independent variables. Some recommendations on how university libraries can promote research output were suggested.

Keywords: Faculty; postgraduates; research output; Ghana; university libraries; University of Ghana Library System.

INTRODUCTION

Research enables the finding of answers to questions (Neuman, 2006). Leedy (quoted in Aina, 2002) defines research as the manner in which attempts are made to solve problems in systematic ways to push the frontiers of human ignorance or confirm the validity of the solutions to problems others have presumably solved. Research is not conducted in a vacuum and therefore in tertiary institutions especially, university libraries play a key role in ensuring that research output is of good quality and up to standard. Thus, Okafor (2011) claims that the outcome and the extent of the functions of researchers in creating new knowledge and innovation are all forms of research output. By Okafor's submission, research output is a means by which researchers contribute their own knowledge to the existing literature. The more research outcome is published in all formats (print or electronic) the higher the probability that availability and access to information is assured.

According to Prytherch (2000) the objective of university libraries is to serve the information needs of the staff, students and researchers who make up the university community. University libraries provide: study areas for users, lending services appropriate to different types of users and an active information service which may extend beyond the institution to local industry and commerce. The university community places much emphasis on research and publication not only because it is presumed that research enriches teaching and the learning process, contributing to the body of knowledge, but also because it is a major determinant of institutional prestige and that of the nation at large (Alemna, 1998). This is due to the fact that a nation's wealth and economic progress depends on the extent of research carried out within it.

Although university libraries have long enjoyed their status as the "heart of the university" Oakleaf (2010), in recent decades' higher education environments have changed. Whereas government officials see higher education as a national resource, employers view higher education institutions as producers of a commodity, namely, an educated and trained workforce. In view of this, top university faculties expect higher education institutions to support and promote cutting-edge research.

Abrahams et al (2008) observed that when many librarians think of research, they likely picture the activities students engage in while working on papers and other assignments for courses. Many undergraduates, however, also engage in independent research. There are obvious opportunities to extend existing library services, particularly information literacy programs, into the undergraduate research community (Jain, 2012). Jain further asserts that librarians may be challenged in their own assumptions, understandings and practices regarding students and faculty and may have to modify them

Onyancha (2007) opine that in Africa not much is presently known about the nature of research and publication patterns by university librarians as well as the major role played by these university libraries through the model of engagement. As Stover (1996) explains, university librarians support members of the university community by managing, organizing, evaluating and disseminating the information they need. He argues that, publishing or creating information has not been part of university librarians' resume and therefore, believes that it is vital for university librarians to be involved in publishing in order to support the scholarly communication process. Bahr and Zemon (2000) observe that university librarians in developed countries publish extensively, and in some institutions, publication is actually a requirement for promotion. However, this is not the case in the Sub-Saharan region. Therefore, based on the preceding discussion, for university libraries to fully play their roles in promoting research output, then university librarians, as the key policy makers and managers who would oversee successful research in their institutions, needed to be encouraged and given the needed time and resources to publish. For this reason, the authors were inspired to examine the role university libraries play in promoting research output. The paper focuses on two issues namely; how do university libraries affect sharing of research output by postgraduates and university faculty? Secondly, do university libraries directly influence research output in tertiary institutions?

In view of this, the present study's specific objectives are to assess the role played by university libraries in tertiary institutions, examine the relationship between university libraries' role and promoting university research output, ascertain the challenges encountered by university libraries in promoting university research output as well as propose strategies to enhance university libraries in promoting university research output using the University of Ghana Library System (UGLS) as a case study.

Background of the University of Ghana Library System (UGLS)

The UGLS consists of the main library (Balme Library) and all other subsidiary and departmental libraries of the University of Ghana, Legon. These libraries are located on the various University of Ghana campuses and together enhance and promote teaching, learning and research at the university.

The stock consists of monographs, serials, magazines, newspapers, and pamphlets. Student text books form a large part of the stock. There is a large collection of Africana materials from all parts of Africa. The Balme Library, which is the central library, doubles up as a depository library for the World Bank and the United Nations as well as Ghanaian publications. The library also possesses CDs, microforms and videos. University online databases containing mostly journal articles are currently available mainly through the Consortium of Research and University Libraries in Ghana (CARLIGH) (UG Balme Library, 2014).

The major services including circulation, cataloguing and acquisitions are automated. The collections are accessible through the *online public access catalogue* (OPAC) which allows patrons unlimited access to the library's collection via the internet from within or outside the library. Users search the library *catalogue* principally to locate books and other material available within the UGLS. This means that patrons of the library have to be computer literate. Some of the major units responsible for promoting research output include Institutional Repository, Research Commons and Faculty Research Commons, Information Access Center (IAC), the Office of Research Innovation and Development (ORID).

Significance of the Study

The purpose of the study was to examine the role university libraries play in promoting research output. The authors observed that this study would go a long way to informing users in the university community about the significant role university libraries play in supporting and promoting research. Additionally, the outcome of this study contributes to knowledge and literature in the subject area under investigation as well as subsequent studies in related fields. In other words, the findings of the study served as evidence so that researchers and stakeholders in other university libraries could also appreciate the problem. The results of this study may serve as a useful source of reference to future researchers, academia, policy makers, and management of university libraries. Also it may serve as an input for policy formulation to regulate library services and on the use of social media in marketing library and information services.

Scope of the Study

The study was conducted at the University of Ghana, Legon. Though the study was restricted to the faculty and postgraduates, it did not consider the number of research publications by the groups across international and local journals.

LITERATURE REVIEW

The literature review considers global and local perspectives on research output, university libraries in universities and open access and university library. It ends by designing a framework for the study.

Global perspective of research output

Globally, research is key within universities, thus the need for university and library management to advance the right environment for promoting research output. The authors have provided highlights on the global perspectives of research output in some regions in Africa as seen. For instance, Robertson, Al-Habib, Al-Khatib and Lanoue (2001) claim that less than 1 per cent of the 236 articles published in the ten-year period between 1990 and 1999 in a prestigious international journal focused on an Arab country in the Middle East. In 2011, Thompson Reuters found out that only 4% of the world's scientific literature is from the Middle East with 90% of that output concentrated on Turkey, Iran, Egypt, KSA and Jordan (Adams *et al.*, 2011). Looking at the research database of 18,000 titles from more than 5,000 publishers, during the period 1996-2009; Business, Management and Accounting (BMA) papers published from the MENA region (the Middle East and North Africa *region*), accounted for less than 1% of the total papers published (SCImagojr.com, 2011).

Worldwide it is estimated there are over 50 million journal articles since they first appeared in 1665 (Jinha, 2010). There are an estimated 5-6 million researchers in the world and every year 1 million are unique repeat authors (Mabe and Amin, 2012). The average productivity of each author is about one unique paper per year (Tenopir and King, 2010). The highest output of BMA papers from MENA countries is UAE at 2.92% which is comparable to places like Hong Kong (3.37%) but only in percentage terms. MENA countries lag behind in terms of total output numbers, citations, self-citations and H-index (Scimagojr.com 2011). Since the MENA population is young and growing (6% of world population, 3% growth rate; 1/3+ of the population is under 15), if the factors that hinder and encourage research are identified, the MENA research output can be increased (Population Reference Bureau, 2001; Atlas of Islamic-World Science and Innovation, 2011).

Research output in Africa

According to meta-analysis studies by Farley and Lehmann (2010) and Geyskens *et al.* (2008), there appears to be less research output in emerging markets. Popoola's 2002 study on the use of information products and services in social science research in Nigerian universities used questionnaires to find out the number of publications that appeared in the refereed publication outlets in preceding three years by types of publication. The publication types were book chapters, journal articles, conference proceedings, technical reports. Journal articles topped the list of research output with mean value of 12.0. On the whole, the social scientists in the Nigerian university system produced an average of 7.0 publications from 1999-2001 with an average of approximately two publications per year (Popoola, 2002).

In another study, Oduwole and Ikhizama (2007) used survey method to ascertain research output of librarians in Nigerian agricultural research institutes. They found out that the librarians' research output, although generally low, was related to their work experience. Also, Cheimeke *et al.* (2009) investigated the research output of Nigerian tertiary institutions using nine journals randomly selected from African Journals Online (AJOL). They found out among other things that research papers from Nigeria in the journal accounted for 39.1% of the total number of publications in the journals during 1999-2005.

Roles of university libraries

Traditionally, the library has been seen as the heart of the university, a place of fundamental importance to every faculty member, researcher and student on the university campus (Stamatoplos, 2015). Faculty as well as students visit the library regularly, consult the contents of its shelves, talk to library staff, order books or articles, and spend time browsing, reading and working within its walls.

Many researchers still visit libraries. They go to find items they know they want and know to be there, sometimes to browse, especially books, grey literature and new issues of journals, to recommend books for purchase, to obtain journals and books which they take away to photocopy for free in their own department, and to get away from the telephone and other distractions of working life (Jain, 2012)

In reference to scientific discoveries and practice of scholarship, university libraries are one of the most enduring features of the academy (Garner, 2006). But in recent years, university libraries are increasingly being asked to justify their existence within the academy. Perhaps as reported by the Research Information Network (2011), is that university libraries provide a physical manifestation of the scholarly ethos by promoting research output. The section below reflects on the roles by university libraries within higher learning institutions.

Promoting new models of scholarly communications

Balakrishnan (2013) establishes that university libraries are critically important in helping researchers to exploit the full benefits and opportunities of the networked world, including such developments as open access and social media. However, libraries are not always well-equipped to promote change, and researchers sometimes resist efforts to modify their behaviours and practices. Nevertheless, many libraries have succeeded in addressing such problems by establishing stronger links with researchers and refocusing their services to promote and exploit new technologies and new models of scholarly communication.

Setting up institutional repositories

Globally, repositories have the mandate to increase the visibility of the institution and raise the profile of researchers. Thus, in the context of UGLS, UGSpace serves as the repository. UGSpace is the institutional repository of the University of Ghana and is an open access electronic archive for the collection, preservation and distribution of digital materials. UGSpace was established in 2013 to facilitate the deposit of digital content of a scholarly or heritage nature to ultimately share, preserve and promote the intellectual output of the University in a managed environment (<http://ugspace.ug.edu.gh/>). In Europe and beyond, Jain (2012) iterated that universities now have repositories to store and make available institutional assets such as research papers and theses. Importantly, repositories are only as valuable as the content they hold, and now the focus is on increasing the volume of content, by making it routine for researchers to deposit their outputs (Balakrishnan, 2013).

Institutions respond to changes in research environment

In recent years, many university libraries have demonstrated that they can seize opportunities to help institutions respond to changes in the research environment. The central and impartial position of university libraries, together with their information and organisation expertise, puts them in a good position to play a wide institutional role and deliver new value (Obaseki, et al., 2010). It is worthy to note that outward-facing libraries can help in linking research support and administration, leading to better research management and a higher profile for the library across the institution. Okpe, et al. (2013) indicate that seizing these opportunities is not always straightforward since, in some institutions, libraries have to overcome traditional views about their appropriate role.

Open access (OA) and University library

Universities are mandated to provide quality information services to empower the library in carrying out its core activities of teaching, learning, research, and community service/consultancy (Balakrishnan, 2013). The Association of Commonwealth Universities in 2014 reported that the University of Nairobi library identified a lack of awareness of the potential of OA resources amongst staff and students as a genuine barrier to the advancement of knowledge in the institution.

The major channels to achieve Open Access are through publishing in journals and depositing scholarly materials in institutional repositories. Evidence available from the Association of Commonwealth Universities suggests that institutions benefit from open access through higher usage of their research and that the greater visibility of their research can result in higher rankings, thus enhancing the profile of the institution. OA also has benefits beyond academia through the diffusion of knowledge to other social and economic sectors.

Conceptual framework

The framework adopted for this study is derived from the Model of Engagement developed by Association of College and Research Library (ACRL) (2008). The model opines that employees must be involved in the vision and mission of the organization.

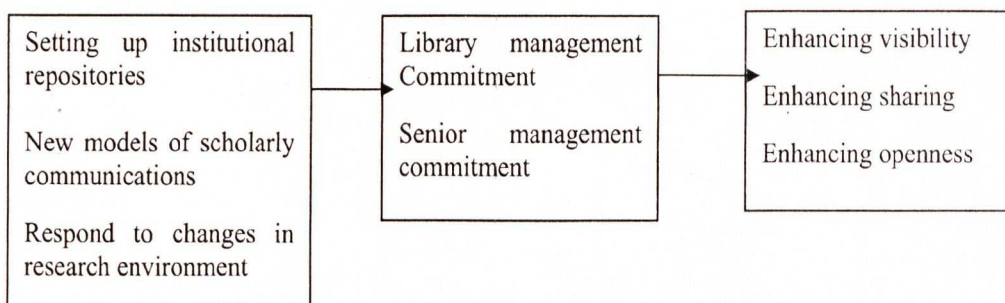
Conceptualizing the framework to this study, the model postulates that librarians and by extension, higher learning institutions must have library services for students, faculty, staff and administrators that provides support for teaching, learning and research. In situating the framework to this study, university libraries need significant efforts through

- i. Setting up institutional repositories
- ii. New models of scholarly communications
- iii. Respond to changes in research environment

In order to optimise the visibility, sharing, openness and usage of their research discoveries and output, the framework aligns most closely with the purpose of this study as compared to other theories in the library environment. The independent, dependent and moderating constructs are identified in the figure below.

Figure 1: Conceptual framework for promoting research output in libraries

Independent Moderating Dependent



Source: Researchers' Own Construct

RESEARCH METHODOLOGY

This study adopted a quantitative methodology because, although few in number, the existing studies on library and research output in Africa have used the quantitative methodology. The authors sampled one hundred and fifteen (115) respondents from University of Ghana, Legon, who comprised of faculty and postgraduate students. Undergraduates were excluded mainly because the concept of research output in academia is fairly new or low at the undergraduate level. The study also used simple random sampling methods to select respondents. The instrument adopted for primary data collection and analysis and interpretation of information collected was questionnaires and the Statistical Package for Social Scientist (SPSS) software respectively. Limitations included the collection of data was time consuming and cost intensive.

ANALYSIS AND DISCUSSION OF FINDINGS

To understand the position of the respondents in relation to the role of university libraries in promoting research output and the objectives of the study as a whole, some biographical information was collected.

Table 1: Biographical Information

Gender of respondents		
Responses	Frequency	Percent
Male	60	52.2
Female	55	47.8
Age of respondents		
Responses	Frequency	Percent
18-29 years	65	56.5
30 – 39 years	25	21.7
40 – 49 years	15	13.0
50 – 59 years	10	8.7
Status of respondents		
Responses	Frequency	Percent
Faculty	30	26.1
Post-graduates	85	73.9
Total	115	100.0
Level of Post-graduates		
Responses	Frequency	Percent
Masters' degree	70	82.4
Ph.D	15	17.6
Total	85	100.0

Source: Field data, May, 2016.

Constituting 52.2% of the study's population, males outnumbered females at 47.8%. Also, the majority of the respondents (56.5%) were aged 18-29 years while a few of them (8.7%) were within the 50 - 59 years age range. 73.9% of the population were post-graduate students with 26.1% being faculty members. In addition, at 91.3%, the majority had Masters' degree.

The Cronbach's alpha analysis was used to determine the reliabilities of the variables used in the study. The mean statistics analysis was used to determine the prevalence of the various facets of university libraries and research output (providing services, equipping users and promoting research output), awareness and use for library facilities, challenges and strategies in promoting research output. Moreover, to establish the relationship between the status of respondents and university libraries and research output, the Pearson's product moment correlation analysis was used.

Table 2: Descriptive Statistics of Study Variables

Study Variables	N	Mean	Std. Deviation	Cronbach's Alpha	Mean Ranking
Providing services	115	3.8905	1.22333	.76	1 st
Equipping users	115	3.6956	.84296	.81	2 nd
Promoting research output	115	3.5876	.78767	.85	3 rd
Strategies	115	3.3678	.71234	.88	4 th
Challenges	115	2.8154	.54674	.89	5 th

Source: Field data, May, 2016.

The means, standard deviations, and reliabilities of all variables from responses of 115 faculty members and post-graduate students of the UG, Legon are reported in Table 2. A mean ranking of the various dimensions of provision of services showed that respondents agreed that services were rendered to them by university libraries in their research for a better output (M=3.89, SD= 1.223) followed by equipping users in terms of facilities, skills and knowledge (M=3.69, SD= .842), promotion of research output (M=3.58, SD= .787), strategies (M=3.36, SD= .712) and challenges (M=2.81, SD=.546) in that order.

The Cronbach's alpha analyses of all the variables employed in the study revealed that they were reliable since they were found to be above the .6 threshold prescribed by Sekaran (2005). From Table 2, provision of services recorded Cronbach's alpha reliabilities (α) of .76, equipping users recorded .81, promotion of research output recorded .85, strategies of promoting research output recorded .88 and challenges, .89 which indicates that all variables were internally consistent and hence were appropriate for the study.

Table 3: Status of respondents, university libraries and research output

		1	2	3	4
Status of respondents	Pearson Correlation	-			
	Sig. (2-tailed)				
Providing services	Pearson Correlation	.309**	-		
	Sig. (2-tailed)	.001			
Equipping users	Pearson Correlation	-.147	.529**	-	
	Sig. (2-tailed)	.134	.000		
Promoting research output	Pearson Correlation	-.214*	-.473**	.040	-
	Sig. (2-tailed)	.021	.000	.688	

Notes: * $p < 0.05$; ** $p < 0.01$. (Source: Field data, May, 2016.)

The relationship between the status of respondents and the various dimensions of university libraries and research output were determined using Pearson's product moment correlation analyses as displayed in Table 3 above. The study revealed a significant positive relationship ($r=.309$, $p < 0.001$) between the status of respondents and provision of services. This is an indication that in the view of respondents, the services rendered to them by university libraries is likely to be dependent on whether they are faculty members

and post-graduate students. Thus, one's status is likely to affect the services received from university libraries be it provision of user education or orientation, interlibrary loan services and so on.

A significant positive relationship ($r=.214$, $p<0.021$) was also found between the status of respondents and promoting research output. That is to say, promoting reference tools, advocating strongly for open access among researchers, organising conferences to share research findings and promoting research output via social media is likely to be affected by whether the respondent is a faculty member or post-graduate student. In other words, one being a faculty or post-graduate student could influence how research output would be promoted. That notwithstanding, there was no significant relationship ($r=.147$, $p<0.134$) between the status of respondents and equipping users. Thus, users of university libraries are equipped in terms of facilities, skills and knowledge, regardless of their status (being a faculty member or post-graduate student). It may be generally observed that the status of respondents has a significant positive relationship with provision of services by university libraries and promotion of research output.

Table 4 below shows the information as gathered on the level of awareness and usage of library facilities.

Table 4: Awareness and use of library facilities

Library facilities supporting research	Awareness		Use	
	Yes	No	Yes	No
Information Access Center (IAC)	85 (73.9%)	25 (21.7%)	50 (43.5%)	55 (47.8%)
Research Commons	110 (95.7%)	-	100 (87.0%)	5 (4.3%)
Faculty Research Commons	80 (69.6%)	30 (26.1%)	40 (34.8%)	70 (60.9%)
Institutional Repository (UGSpace)	30 (26.1%)	75 (65.2%)	40 (34.8%)	70 (60.9%)
Knowledge Commons	100 (87.0%)	5 (4.3%)	55 (47.8%)	55 (47.8%)

Source: Field data, May, 2016.

From the results displayed in Table 4, majority of the respondents 110 (95.7%), 85 (73.9%), 80 (69.6%) were aware of library facilities such as the Research Commons, IAC, Faculty Research Commons respectively. Strangely, on the account of Institutional Repository (UGSpace) which was one of the platforms for sharing university digital collections, respondents were not aware and so did not use it.

From the findings, out of the majority of respondents who knew about these library facilities, only 100 (87.0%) and 100 (87.0%) indicated "Yes" to using the Research Commons and Knowledge Commons respectively. However, half of the respondents 55 (47.8%) who were aware of the Knowledge Commons, used the facility while the other half did not. On this note, it can be concluded that, even though a greater proportion of the respondents were aware of the available library facilities at the UGLS, only the Research Commons was mostly used.

The respondents were required to use a 5-point Likert scale anchored on Strongly Disagree (1), Disagree (2), Neither agree nor disagree (3), Agree (4) and Strongly Agree (5) to measure the challenges and strategies of promoting research output. The means and standard deviations are presented in tables 5 and 6 below.

Table 5: Challenges in promoting research output

Questionnaire item	Mean	Standard. Deviation	Rank
Difficulties in accessing relevant information from databases	3.2609	1.07676	1
Inadequate virtual research environmental /communities (VRE/C)	2.8261	1.17175	2
Inadequate collaboration between the faculty, researchers and library	2.7826	1.10646	3
Librarians lack the requisite research knowledge to support research needs of users	2.5217	.88206	4
Non conducive environmental /platforms for sharing research output	2.5217	1.17986	4
Lack of awareness of the potential of open access resources amongst faculty members and students	2.5217	.97646	4
Low level of computer literacy among librarians	2.3913	1.05710	5
Poor infrastructure to provide effective electronic services	2.3478	1.20702	6

Source: Field data, May, 2016.

It could be concluded from the value of mean generated that 'Difficulties in accessing relevant information from databases' scored the highest mean of 3.26 per respondent. On the contrary, 'Poor infrastructure to provide effective electronic services' was rated the lowest with a mean score of 2.34. Thus, respondents agreed to the difficulties in accessing relevant information from databases as the major challenge encountered in the promotion of research output and that explains why quite a number of the subjects were not using the library facilities available at the University of Ghana, regardless of the awareness level and this is evident in Table 4. However, "Poor infrastructure to provide effective electronic services" emerged as the least of the challenges faced by users and it is important to note that, this is equally essential to promote access to these library facilities. In view of this, there is the need to put measures in place to ensure the provision of adequate infrastructure which includes computers and reliable internet service to guarantee access to relevant information for quality research output.

Table 6: Strategies to promote research output

Questionnaire item	Mean	Standard. Deviation	Rank
Creating a strong commitment towards promoting research output	4.2304	.95073	1
Enhancing the accessibility of research output	4.1404	.85349	2
Promoting appropriate collaboration among the faculty members, students and the library	4.1364	1.08030	3
Promoting awareness of open access resources among graduate students, faculty and researchers	4.0870	1.48422	4
Training librarians periodically on ICT competencies	4.0720	1.66429	5
Identifying and creating credible publication sources for researchers	4.0570	1.86429	6
Enhancing the visibility of research output	4.0230	1.93250	7
University-wide strategy for research development	4.0000	1.98230	8

Source: Field data, May, 2016.

According to the results drawn from the value of mean generated, 'Creating a strong commitment towards promoting research output' scored the highest mean of (4.23) indicating that it is the best strategy to promoting research output according to the respondents. This was followed by the enhancement of accessibility of research output (4.14), promotion of appropriate collaboration among the faculty members, students and the library (4.13), promoting awareness of open access resources (4.08), training librarians periodically on ICT competencies (4.07), identifying and creating credible publication sources for researchers (4.05) and enhancing the visibility of research output (4.02). That notwithstanding, 'University-wide strategy for research development' was rated the lowest with a mean score of 1.98. This means that respondents did not strongly agree to University of Ghana adopting a university-wide strategy for research development as an effective strategy to counter the challenges encountered in promoting research output.

Discussion of results

The purpose of the study was to assess the role of university libraries in promoting research output. The findings revealed a significant positive relationship between the status of respondents and provision of services as well as promotion of research output. This is a clear indication that one being a faculty member or a post-graduate student could influence the provision of services such as user education or orientation and interlibrary loan services, as well as how research output would be promoted. The findings of the study are confirmed by the study of Stamatoplos (2015) in which it was revealed that library services are provided based on the category of users – that is, faculty members, students or researchers – for better research output. He added that in this light, the key to better research output is the adoption of the engagement model where there is a proper understanding of users and a regard for what makes sense and may really be needed depending on their level of study or faculty affiliation, rather than blindly imposing processes, systems and programs. Owing to this, Stamatoplos (2015) stated that in recent years university libraries have sought partnerships with other campus entities and programs involved in teaching and learning to open new roles and responsibilities for librarians as well as challenge traditional views about the place of the library in the institution.

CONCLUSION AND IMPLICATIONS FOR MANAGEMENT

It has been proven that the status of respondents has a significant positive relationship with provision of services by university libraries and promotion of research output. However, there was no significant relationship between the status of respondents and equipping users. Thus, patrons of university libraries are equipped in terms of facilities, skills and knowledge, regardless of their status (being a faculty member or post-graduate student). That aside, it was also realized that even though a greater proportion of the respondents were aware of the library facilities available at the UGLS, only the Faculty Research Commons and UGSpace were mostly under-utilized. The study therefore recommends awareness campaigns through orientation to management. Also, there is the need to put measures in place to ensure the provision of adequate infrastructure which includes computers and reliable internet service to guarantee access to relevant information for quality research output. This is because, respondents asserted that difficulties in accessing relevant information from databases hinders research output. In addition, a strong commitment towards promoting research output is the best strategy to promoting research output. Respondents agree that university libraries need to secure significant support, expertise and advice for their patrons.

RECOMMENDATIONS

Our study proposes some strategies that can be adopted by the library management, university management and other interested stakeholders. These recommendations include:

Promoting OA institutional repositories (IR) platforms

Wide circulation through OA platforms adds value to research output. However, data gathered revealed that the Institutional Repository (UGSpace) which was one of the platforms for sharing university digital collections, was not adequately used in promoting research works. Despite all the activities and progress on OA over the past years, researchers remain largely unaware of the issues and arguments, and this was reflected in the current study.

The right to know and the right to be known are inextricably mixed. OA can benefit academia by revealing what has been published while simultaneously offering researchers the chance to be known by other researchers and faculty. Increasingly, this capacity to close the gap between developed and less developed countries through access to information is becoming more important for educational, cultural, and scientific development. Thus, promoting OA within Ghanaian universities can foster information and knowledge sharing within research, educational, and scientific communities.

University institutional level strategy

In terms of strategic priority, universities must identify and prioritize focused research areas and establish a pool of researchers in various disciplines within the institution. From the data gathered, the degree of research emphasis and research strategy of a university plays a more important role than years of operation. If a university does not have a pool of researchers within its faculty, it could collaborate with other universities. Through support from the university, the faculty can be sponsored to attend conferences.

Linking publication metrics to faculty promotions

To encourage research among faculty, it is important to link relevant publication metrics to promotions. This is a practice if continued would motivate researchers to advance in promoting research discoveries within their own disciplines through refereed journals or otherwise.

Mentoring engagement

Mentoring is helping researchers to improve on their research disciplines and explore potential untapped research skills as well as acquaint themselves with unidentified OA platforms. Though mentoring can be time consuming on the part of librarians, it is needed for building a research culture among faculty and students. In terms of support, university libraries can provide editing support (to overcome language barriers), encourage collaboration, invest in training researchers and providing mentorship. Beyond just building mentee-mentor relationships, research output can also increase when universities produce their own journals. Though some universities have officially launched their own, the continuity is a bit slow due to reasons that are not known.

Implications for future research

The study showed that the status of respondents has a significant positive relationship with provision of services by university libraries and promotion of research output. Therefore, this is a call to future researchers to consider the services librarians provide in promoting the research output to faculty and postgraduates.

REFERENCES

Abrahams, L., Burke, M., Gray, E. and Rens, A. (2008). *Opening Access to Knowledge in Southern African Universities*. SARUA Study Series. Accessed on April 15, 2016, Available at <https://www.ifla.org/files/assets/reference-and-information-services/publications/5-kassahun-en-doc.pdf>

- Aina, L. O. (2002). *Research in information science: an African perspective*. Ibadan: Stirling-Horden
- Alemna, A. A. (1998). An overview of library and information research scene in West Africa. *African Journal of Library, Archive and Information Science*, 8(1): 1-12
- Bahr, A. H. and Zemon, M. (2000). *Collaborative Authorship in the Journal Literature: perspectives for university librarians who wish to publish*. Accessed on April 15, 2016 from: <http://www.ala.org/ala/acrl/acrlpubs/acrljournal/backissue2000bSeptember2/bahr.pdf>
- Balakrishnan, M. Stephens. (2013). Methods to increase research output: some tips looking at the MENA region', *International Journal of Emerging Markets*, 8(3), 215-239.
- Cheng, L.T.W., Chan, K.C. and Chan, R.Y.K. (2003). Publications in Major Marketing Journals: An Analysis of Research Productivity of Asia-Pacific Universities. *Journal of Marketing Education*, 25(2) 163-176
- Chiemeke, S. Longe, O. and Shaib, I. O. (2009). Research outputs from Nigerian Tertiary Institutions: An Empirical Appraisal. *Library Philosophy and Practice*.
- Farley, J. U. and Lehmann, D. R. (2010). The important role of meta-analysis in international research in marketing. *International Marketing Review*, 18(1), 70 – 79.
- Gregory, G. M. and Medford, N. J. (2006). *The successful university librarian: winning strategies from library leaders*. Accessed on 15/04/2016 from: <http://www.ala.org/ala/acrlpubs/crljournal/backissues2006a/maycrl/gregoryreview.cfm>
- Jain, P. (2012). Promoting Open Access to Research in University Libraries. *Library Philosophy and Practice (e-journal)*. Accessed on 15/04/2016 from: <http://digitalcommons.unl.edu/libphilprac/737>
- Jinha, A. E. (2010). Article 50 million: an estimate of the number of scholarly articles in existence. *Learned Publishing*, 23(3), 258-263
- Mabe, M.A. and Amin, M. (2012). Dr Jekyll and Dr Hyde: author-reader asymmetries in scholarly publishing. *ASLIB Proceedings*. 54(3), 149-157
- Oakleaf, M. (2010). *The value of university libraries; a comprehensive research review and report*. Association of College and Research Libraries (ACRL), A Division of the American Library Association, Chicago.
- Obaseki, T, I. Ibrahim, S. D. and Momoh, J. I. (2010) Scientific Research in Librarianship: *A Panacea for Library Development in Nigeria*. *Library Philosophy & Practice*
- Oduwole, A. A. and Ikhizana, B. O. (2007) Research output of Librarians in Nigeria Agricultural Research Institutes, *Nigerian Libraries*, 40, 27 – 40
- Okafor, V. N. (2011). Comparative Analysis of Research Output of Federal Universities in Southern Nigeria, *Library Philosophy and Practice 2011*
- Onyancha, O. B. (2007). LIS research in Africa: how much is it worth? A citation analysis of the literature, 1986-2006. *South African Journal of Libraries and Information Science*, 73(2), 95.
- Popoola, S. O. (2002). The use of information product and service in social science research in Nigerian Universities. *African journal for psychological study of social issues* 5(2)296-308.

- Population Reference Bureau (2001). Population trends and challenges in the Middle East and North Africa, Accessed May 1, 2016 from <http://www.prb.org/pdf/PoptrendsMiddleEast.pdf>.
- Prytherch, R. (2000). *Harrods's Librarian's glossary and reference book*. 9th ed. London: Gower.
- Robertson, C., Al-Habib, M., Al-Khatib, J. and Lanoue, D. (2001). Beliefs about work in the Middle East and the convergence versus divergence of values. *Journal of World Business*, 36(3), 223-244.
- Rowbotham, J. (2011). End of ERA: Journal Ranking dropped. *The Australian*, Accessed 10th May, 2016 from <http://www.theaustralian.com.au/higher-education/end-of-an-era-journalrankings-dropped-story-e6frgcjx-1226065864847>
- Stamatoplos, A. (2015). An Annotated Bibliography of Faculty Mentoring of Undergraduate Research. *Council on Undergraduate Research Quarterly*, 26(2), 84-89.
- Stover, M. (1996). *The librarian as a publisher: a case study of a World Wide Webpublishing project*. Accessed on 15/04/2016 from: <http://www.library.ucsb.edu/untangle/stover.html>
- Thompson Reuters (2011): Journal Citation Reports, Accessed May 10, 2016 from: http://thompsonreuters.com/products_services/science/science_products/az/journal_citation_reports/