

Scholarly productivity of Arab librarians in Library and Information Science journals from 1981 to 2010: An analytical study

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Abstract

Several studies discussed the characteristics of authors who published in Library and Information Science journals. Although none focused specifically on Arab librarians as authors, the current study attempts to reveal the scholarly contributions to library literature by Arab librarians. The study describes and analyses the journal research publications in Library and Information Science journals by professional librarians from 1981 to 2010. Single-author articles are found to be highly followed by two and three authored articles. The average degree of collaboration between authors in Library and Information Science journals is 9.64% (only 19 journal articles written by at least two or three authors). Finally, this study provides recommendations to Arab librarians to encourage them to be engaged in research in the Library and Information Science discipline.

Keywords

Arab librarians, scholarly communication, librarianship, scholarly productivity, Library and Information Science journals

Introduction

It is important for any discipline to investigate the patterns of its publications and to learn about contributions of its members. In this context, there have been many studies that focused on scholarly productivity in several disciplines using bibliometric indicators based on citation analysis, author productivity, and scholarly collaboration. While there have been numerous studies of professional librarians as scholars or researchers, specifically in the United States, for 30 years, little is known of the scholarly contribution by librarians in the Arab world. In fact, the author searched Library and Information Science (LIS) databases, but he could not find any papers on scholarly productivity of professional librarians in Arab countries who published scientific articles specifically in LIS scholarly journals. Based on the lack of such research, this study sought to establish and compare the research, publication patterns and outputs of librarians in the Arab world from 1981 to 2010.

In terms of scholarly productivity of professional librarians, some people may believe that the role of a librarian is confined to shelving and checking out books, processing information resources in the library, and providing information services to users. Moreover, some scholars such as Sitienei and Ocholla believe that librarians are not responsible for doing research or publishing. Publishing has not been a part of academic librarians' resumes (Sitienei and Ocholla, 2010). Thus, they cannot imagine that a librarian can conduct research or be a practitionerresearcher, as well. In fact, one of the most important factors that may help a librarian to succeed in his/her professional life is to participate in scholarly communication and to be a librarian-author or a scholarpractitioner. This idea was confirmed by Verzosa

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Mahmoud Sherif Zakaria, Library and Information Science Department, Ain Shams University, Cairo, Egypt. Email: mahmoud_zakaria@art.asu.edu.eg (2007) who believes that it is important for librarians to be engaged in scholarly activities that have value to librarianship.

In terms of publishing on the web, Stover (1996) contended that it is important for librarians to be involved in publishing in order to support the scholarly communication process. Gregory (2005) also suggested that academic librarians would also benefit from doing research because it allows them to maintain their faculty status or push for promotions in the future.

In contrast, Boice et al. (1987) argue that librarians are of great importance to the library literature. Librarians report that they have little time to devote to the activity; however, academic librarians presented many scholarly contributions to LIS literature each year.

It seems that there is more interest in scholarly communication between the professional librarians in developed countries. Therefore, we can interpret the notable contribution in LIS literature by those who work in academic libraries, especially in US. Zemon and Bahr confirmed (1998) that there was considerable interest in promoting publication by college librarians during the previous several years.

In 1992, the College Library Section (CLS) of the ACRL established a committee to encourage college librarians to do research and to publish. The committee hosted roundtable discussions at national ACRL conferences and published *InPrint: Publishing Opportunities for College Librarians* by Livingston (1997). *InPrint* is a guide to journals that are potential publishers for college librarians.

Again, for the LIS field in the Arab world, no accepted study has previously been conducted to determine contributions by professional librarians who published scientific articles specifically in its scholarly journals. Based on that, this study sought to establish and compare the research, publication patterns and output of academic librarians in the Arab world from 1981 to 2010, as will be mentioned later in the methodology section. The author thinks that the current study will serve as a baseline of research productivity for the profession of librarianship in the Arab world.

Literature review

The researcher found that most of the literature related to contributions by librarians was produced by US researchers as mentioned before. The researcher also noted that there were some studies that used a survey approach, depending on questionnaires, in order to investigate the contributions by academic or college librarians. Other studies depended on the analysis of a selected sample of scholarly journals in LIS to reveal the productivity of librarians. Moreover, only few studies have depended on personal interviews with librarians themselves in order to get information about their contributions to research in LIS. Thus, this review will attempt to follow and cover the most important studies conducted in the field of scholarly productivity by librarians in LIS journals as whole.

In general, there are two categories of studies related to the literature of authorship in LIS: journal-based analysis and individual-based analysis. *Journal-based studies* focus on the characteristics of authors in one journal or in a group of related journals. In contrast, *individual-based studies* are concerned with the publication habits of a defined population of librarians or information scientists (Nisonger, 1996).

Krausse and Sieburth conducted a study based on articles in 12 LIS journals during the period 1973-1982. They found that librarian-authors who work in libraries with holdings of one or more million volumes might publish more articles compared with those who work in small libraries, and found that academic librarians wrote 42.3% of the articles in the 12 journals they analysed (Krausse and Sieburth, 1985). The same year, Watson attempted to document the affiliation of authors of articles published in journals in LIS during the period 1979 through 1983. Watson (1985) also found that 44.2% of authors were academic librarians, and 22.9% LIS were faculty staff and students, and that academic librarians authored 44.2% of the articles in 11 journals in the field of librarianship. The researcher thinks that Watson's study published in 1985 was the first attempt that reflected the nature of literature patterns by academic librarians.

In the light of this idea, Budd and Seavey investigated 36 LIS journals during the period 1983–1987. They concluded that larger university libraries contributed the most productive authors (Budd and Seavey, 1990). In another study, Zemon and Bahr suggested that more authors from large university libraries and fewer from college libraries contribute to the library literature. The authors examined the articles published by college librarians in *Journal of Academic Librarianship* and *College & Research Libraries* and found that about 60% of the articles were written by authors from large libraries (Zemon and Bahr, 1998).

Joswick conducted an individual-based study in order to investigate the journal article publication characteristics of academic librarians in the state of Illinois. He found that 63% of articles were written by single authors. Based on the results of his study, Joswick (1999) confirmed that collaborative authorship continues to grow, especially among women authors, in the state of Illinois. In a similar study, Weller et al. (1999) examined the contributions to the peerreviewed literature of LIS by US academic librarians. They analyzed the articles published from 1993 to 1997 in 32 journals and found that 43.6% of articles were authored by at least one academic librarian as a pattern of single authorship.

In terms of gender productivity in LIS literature, Håkanson analysed three scholarly core journals of LIS with respect to gender of article authors and gender of authors cited in these articles. The share of female contributors to these journals had certainly increased during the studied period from 1980 to 2000 (Håkanson, 2005).

Hildreth and Aytac studied a sample of 204 articles of LIS journals between 2003 and 2005 and found that 47.1% of the articles were written by practitionerresearchers (librarians) alone, 43.2% by academics ('academic-researchers' who teach in schools of LIS), and 9.71% by mixed research teams (Hildreth and Aytac, 2007). Soutter (2007) used another method in order to describe the literature of academic librarians in his study. He depended on searching some specialized databases (like ERIC, LISA, LISTA, and LIBLIT) for gathering data about peer-reviewed articles from 2001 to 2005. He noted that most articles were written by single authors and by authors associated with academic libraries or library schools. The majority of articles on education and continuing professional development were written by authors at school libraries.

Personal interviews were a different methodology introduced by Fennewald in order to allow librarians to describe their motivations to engage in research: what programs, experiences, or support they have found useful; and, what hindrances they have faced. Librarians at the Pennsylvania State University were the population of Fennewald's study. He found that limited financial support was available to attend conferences and there was no formal policy on released time to conduct research (Fennewald, 2008).

Sitienei and Ocholla compared publication patterns of academic librarians in eastern and southern Africa. The results indicated that South Africa was the most productive country in terms of publications (Sitienei and Ocholla, 2010). The research visibility of university librarians in Eastern Africa from 2000 to 2009 was analysed by Ocholla et al. using informetric techniques. The authors found that the research visibility of academic librarians was insignificant and that most academic librarians preferred individual publishing; and they also figured out that the most published authors came from Tanzania (Ocholla et al., 2012). In the same year, the authors also conducted another study reporting the publication patterns of university librarians in Southern Africa. The study confined its scope to publications produced within the previous 10 years (2002–2011) (Ocholla et al., 2012).

In a recent study, Kennedy and Brancolini (2012) reported on the results of a survey of academic librarians about their attitudes, involvement, and perceived capabilities using and engaging in primary research. The authors concluded that academic librarians were actively engaged in the research process. In terms of academic preparation, the participants confirmed that LIS Master's degree training adequately prepared them to read and understand research but it did not prepare them to conduct research. In another recent study, Harkema and Nelson (2013) discussed the role of librarians in scholarly environment, as the librarians make the published content findable and accessible to the researchers.

In general and on the level of the Arabic region, Bader (1999) analysed the scholarly productivity of Saudi Arabia and Egypt by using the King Abdul-Aziz city databases and ISI statistics in this context. The study revealed the leadership of Egypt among Arab and Islamic countries. Using SCOPUS database, Elgohary (2009) investigated the productivity of Arab scholars in five countries. The results indicated the leading position of Egypt among other countries in many of the subject fields. However, his study did not address the productivity of Arab librarians in LIS literature.

Regarding the studies of Arabic journals in LIS, the author found more articles focused on many aspects of the study such as evaluating the electronic Arabic journals in LIS (Eddakrouri, 2007), analysis of the methodologies used in LIS articles by authors (Al-Gendy, 2012; Amody and Gohary, 2009), and content analysis of LIS articles (Abd Al-Hady, 2012). In addition, Ismail (2002) analysed the contributions of Arab researchers in LIS based on the data driven from LISA, ISA, and Eric databases. The study revealed the dominance of the English language for the published papers. However, it did not address the Arab librarians as authors.

In all, the present literature review showed that no studies were undertaken on authorship patterns by Arab librarians in LIS journals before, and, therefore, there is a need for conducting such a study to describe the situation of Arab librarians as authors or practitioner-researchers.

No.	Title of journal	Time period	No. of issues
I	Arab Journal for Librarianship and Information Science (AJLIS)	1981-2010	120
2	New Trends In Libraries and Information (NTLI)	1994-2010	34
3	Arabic Studies In Librarianship and Information Science (ASLIS)	1996-2010	45
4	AL-FIHRIST ¹	2003-2010	32
5	Cybrarians Journal	2004-2010	32
6	lalam ²	2007–2010	7
7	Research in Library and Information Science (RLIS)	2008-2010	5
8	Information Studies	2008-2010	9

Table 1. Core list of refereed Arabic journals in LIS.

Methodology

Publications by practitioners or professional librarians may be more important for the literature of LIS because librarians themselves come from an environment that values research and publication and seeks to support researchers in any disciplines in order to find what they want. Thus, the present study sought to describe the contributions of Arab librarians to LIS literature and to answer the following questions:

- 1. To which extent do Arab librarians contribute to the LIS literature?
- 2. What is the frequency of sole authorship and co-authorship for Arab librarians?
- 3. In which subject areas do Arab librarians publish?

Selection of Arabic refereed LIS journals

The present study is a journal-based study investigating the characteristics of journal articles that have been published by professional librarians in the Arab world. Eight refereed journals were chosen as samples for the analysis in the current study, because they are well-known and well-established Arabic journals in LIS for the Arab researchers at regional and local levels in addition to the important role they play in scholarly communication system; and, because they are open venues for both faculty members and librarians to participate in scientific activities. (See Table 1.) The time span selected for study started from the first issue for each journal from 1981 to 2010 so that the researcher could survey the nature of the Arabic journals in LIS for a long period of time. The period for this study started from 1981 because the Arab Journal for Librarianship and Information Science (AJLIS), the first Arabic scholarly journal in LIS, began its publication in 1981.

Because journals studies contain a variety of other types of materials, this study excluded all editorials, introductions, letters to the editor, documentary reports, symposium and conference reports, book reviews, dissertation reviews and translated articles from English to Arabic from the analysis. This study focused only on the peer-reviewed LIS journal articles published by Arab librarians (defined as any *librarian, information specialist,* or *documentation specialist*) as identified by each author's affiliation in each article.

Thus, the focus here will exclusively be on authors who are librarians and who published articles in the selected journals in the current study. It is important to explain that the results of the present study will hold only for the selected journals studied. Thus, one may imagine a more comprehensive result if another study were conducted that covered all categories of information resources in which librarians may publish their productions.

Data collection

Each issue of the selected sample of journals was inspected. Only full-length articles appearing in the journals studied, in Arabic or English language, are included in the study. Any article by even one librarian author was considered and counted as a librarian publication. Based on the main target of the study, the author analysed all issues of the sample journals in order to record the number of refereed articles and the number of authors of these articles specifically who were Arab librarians. The researcher also noted the librarian author's name and his/her institutional affiliation.

Limitations

One of the limitations of this study is the size of the sample. Because there are no updated statistics about the profession in the Arab world, the author found it difficult to determine the whole number of professional librarians who work in libraries in the Arab countries in order to calculate the percentage of their contributions compared with all librarians in the region.

No.	Journal	Total articles	Articles by librarians
1	Arab Journal for Librarianship and Information Science (AJLIS)	690	72
2	Cybrarians Journal	143	53
3	New Trends In Libraries and Information (NTLI)	277	34
4	Arabic Studies In Librarianship and Information Science (ASLIS)	187	20
5	AL-FIHRIST	83	14
6	Information Studies	65	3
7	lalam	51	I
8	Research in Library and Information Science (RLIS)	30	0
		1526	197

Table 2. Librarian contributions to refereed articles in journals studied.

Table 3. Publication output per author.

No. of publications per author	No. of authors	% of author in study	% of men authors	% of women authors
	78	66.67	53.85	12.83
2	18	15.39	13.68	1.71
3	9	7.69	6.84	0.85
4	6	5.13	4.27	0.85
5	0	0.0	0.0	0.0
6	I	0.85	0.0	0.85
7	I	0.85	0.85	0.0
8	3	2.56	2.56	0.0
9	I	0.85	0.85	0.0
Total	117	99.99	82.9	17.09

Results

The journals' productivity

In this section, results from the data analysis are presented. During the time frame of the current study, the eight Arabic journals published 284 issues, with 1.526 peer-reviewed articles written by faculty authors in LIS departments, professional librarians, post-graduate students and others. Only *Research in Library and Information Science* (RLIS) published 13 refereed articles written only by faculty members in LIS departments during the selected period (2008–2010).

The study identified 197 articles (or 12.9% of all articles) as authored by 117 different Arab professional librarians during the period of the study. The average number of articles published per author during the period was 1.68. Articles authored by librarians were not distributed equally among all the sample journals; the percentage of articles authored by at least one Arab librarian was from 0.0% (for *Research in Library and Information Science*) to 36.55% (for *Arab Journal for Librarianship and Information Science*). (See Table 2.)

The authors' productivity

Table 3 reflects the breakdown of numbers of contributions per author. As shown in this table, the absolute majority of librarians (66.67%) published only one article during the time frame of the study. The highest number of refereed articles for one author was nine. Arab librarians who published two or more articles comprised 33.33% of all those who published.

Authorship patterns

The authorship patterns were analysed to reveal the percentage of single and multiple authors. As shown in Table 4, it is noted that single authored contributions have dominated the journals sampled in the study. Of these 178 (90.35%) articles were written by only one author.

Authors by gender

Of the authors 97 (82.9%) were male, and 20 (17.09%) were female. These figures indicate that men published more than women in the LIS profession in the Arab world. But when comparing these

Table 4. Productivity of Arab librarians in LIS journals from 1981 to 2010.

No. of authors	No. of articles	Percentage
I	178	90.35
2	17	8.63
3	2	1.01
Total	197	99.99

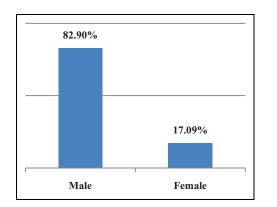


Figure 1. Authors by gender.

results with the gender distribution of professional librarians in another regions, one can notice a big difference between Arab librarians in terms of scholarly productivity.

Depending on authorship characteristics in *College & Research Libraries*, Terry (1996) attempted to design a useful chart in order to illustrate the rise in the percentage of female authorship in that journal from a low of 13% in the late 1950s to a high of 51.7% for the period between 1989 and 1994. Joswick (1999) analysed article publication patterns of Illinois academic librarians and found that 59.64% of the authors sampled were female, and only 39.75% were male. His study concluded that women in Illinois academic libraries were making a significant contribution to scholarship compared with men. Håkanson (2005) found that the share of female contributors to LIS journals had certainly increased during the studied period from 1980 to 2000 (Håkanson, 2005).

These results mean that the situation of foreign women in librarianship has changed from the past, but the Arab women as librarians still face more obstacles on different social levels. They may not find time to develop their research skills or to publish. However, this study revealed the contributions made by Arab women to LIS literature, although these were comparatively fewer than those by men. (See Figure 1.)

Authors by country

An attempt has been made to study the geographical distribution of contributions by Arab librarians.

Table 5. Most productive Arab countries (ranked by no. of articles).

Rank	Arab countries	No. of authors	No. of articles
I	Egypt	56	3
2	Saudi Arabia	21	27
3	Algeria	5	15
4	Oman	10	11
5	Jordon	4	9
6	Emirates	4	7
7	Iraq	4	3
8	Kuwait	4	3
9	Lebanon	2	2
10	Palestine	2	2
11	Syria	2	2
12	Bahrain	I	I
13	Sudan	I	I
14	Tunisia	I	I
Total		117	197

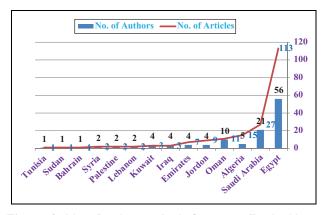


Figure 2. Most Productive Arab Countries (Ranked by No. of Articles).

(See Table 5.) Of the 117 librarians, 56 were from Egypt and they published 113 articles (57.36%). The 21 librarians from Saudi Arabia published 27 articles (13.70%). Only five authors were from Algeria and they published 15 articles (7.6%). Other Arab countries were less represented; only four authors each were from Jordon, United Arab Emirates, Iraq, and Kuwait. It is noted that there was no scholarly contribution from the rest of the Arab countries specifically Libya, Qatar, Morocco, and Yemen; and there was a small percentage of all the professional librarians in some Arab countries such as Bahrain, Sudan, and Tunisia.

Authors' affiliations

The researcher attempted to sort the data set by the authors' institutional affiliations in order to produce a ranked list of the total author count per institution.

Rank	Institution	Country	No. of authors	No. of articles
I	American University in Cairo (AUC)	Egypt	7	20
2	Miser Public Library (MPL)	Egypt	9	12
3	King Saud University (KSU)	Saudi Arabia	4	11
4	Sultan Qaboos University (SQU)	Oman	7	10
5	Egyptian National Library and Archives (ENLA)	Egypt	5	6
6	Juma Almajid Heritage & Culture Center (JAHCC)	Emirates	3	6
7	Al Ahram Organization & Information Technology Center (AOITC)	Egypt	2	6
8	Université d'Oum El Bouaghi	Algeria	I	6
10	King Fahd University of Petroleum and Minerals (KFUPM)	Saudi Arabia	7	5
11	Cairo University	Egypt	2	5
12	King Abdul-Aziz University (KAU)	Saudi Arabia	3	4
13	King Fahd National Library (KFNL)	Saudi Arabia	3	4
14	Umm Elqora University	Saudi Arabia	2	4
15	Yarmouk Univ.	Jordon	2	4
16	Helwan Univ.	Egypt	2	3
17	Naseej, Arabian Advanced Systems	Saudi Arabia	2	3
18	Al- Mosel Univ.	Iraq	2	I
	Other institutions	_	54	87
			117	197

Table 6. Most productive institutions in the Arab world (ranked by no. of articles).

Table 7. Article subject coverage.

Subject area	Total	Percentage	
Librarianship	39	19.8	
Information Technology	38	19.29	
Technical Services	34	17.26	
Information Services	30	15.22	
Information Resources	23	11.67	
Other	21	10.66	
Library Administration	12	6.09	
,	197	99.99	

It is worth noting that most of the institutions in Table 6 are large university libraries. In other words, most of the authors of 73 articles (or 37%) are affiliated with academic institutions.

As mentioned before, the librarians who work in large libraries may publish more articles compared with those who work in small libraries. Based on that, the table illustrates that of the 117 librarians, seven were from the American University in Cairo (AUC), who published 20 journal articles. As can be seen from Table 6, about 54 (46.15%) authors affiliate to a variety of institutions in the Arab world.

Authors' subject coverage

The study identified six subject categories of the publications by Arab librarians as mentioned in Table 7. It is worth noting that *Librarianship* was the most researched subject (19.8%), followed by *Information Technology* (19.29%), and *Technical Services* (17.26%). Only 6.09% of articles by librarians were on *Library Administration*.

Discussion

The main target of the current study is to reveal the scholarly contributions of Arab librarians in a selected sample of LIS journals from 1981 to 2010. The author noticed that Arab librarians are not publishing their works in some journals especially *Research in Library and Information Science* (RLIS) because of the fees they must pay for the publishing process and the journal itself is orientated for promotion purposes to faculty members in LIS in the Arab world.

The results of this study showed that Arab librarians authored only 12.9% of all articles published in the sample journals. Based on this result, the author can conclude that the situation of Arab librarians as authors may differ more from other librarians in previous studies. Krausse and Sieburth (1985) found that academic librarians wrote 42.3% of the articles in the 12 journals they analysed. Watson (1985) found that academic librarians authored 44.2% of the articles in 11 journals in the field of librarianship. Weller et al. (1999) noticed that only 43.6% of articles were written by at least one US academic librarian author. In general, it is important to recognize that the proportion of articles published by librarians is low (only 12.9% as mentioned above) compared to the proportion of whole materials (about 87.1%) published in the sampled journals by faculty members, postgraduate students and unidentified authors.

Regarding the authorship patterns, the study showed that 90.35% of articles were written by only one author. This result can confirm the situation of single authorship phenomenon among Arab librarians as authors. Despite the importance of research collaboration in any scholarly society, the author found that only 19 (9.64%) articles were written by at least two or three authors. One may conclude, then, that the contributions of single authors are more prolific than those of collaborative authors.

The author observed that Egypt was the more prolific country in the region in terms of the authors' productivity and the number of their publications because it has LIS educational systems that started in 1951 when the department of Library, Archives and Information Technology was established at Cairo University as the first LIS department in the Arab region. In addition, Egyptian universities have more than 19 LIS academic departments for both undergraduate and postgraduate education.

In terms of the countries' productivity, the study confirmed that some Arab countries were less represented especially Jordon, United Arab Emirates, Iraq, and Kuwait. On the other hand, there is no scholarly contribution from the other countries, specifically Libya, Qatar, Morocco, and Yemen. The author suggests that the librarians of those countries may publish in other scholarly channels such as conference proceedings, books or non-peer-reviewed journals. Moreover, there are some authors who still prefer to publish in Arabic as a native language in spite of the dominance of English as an international language of science.

Also, it may be surprising to know another reason that probably affects the publication performance of some African countries in this context. This cause is related to diaspora that is prevalent in the African countries. Sitienei and Ocholla focused on the issue of diaspora as a factor of decreasing of scholarly contributions by some African countries, 'whereby many intellectuals migrate to other countries because of push factors such as unemployment, poor remuneration, no academic freedom or freedom of expression, and poor government policies. This affects many professions, including Library and Information Science' (Sitienei and Ocholla, 2010: 40).

The author noted that Arab librarians published more in both *Librarianship* and *Information Technology* because the period covered by the current study witnessed an interesting conversion in library administration systems from traditional to automated library systems in most Arab countries.

Conclusion

According to Swigger's view when he described LIS as 'essentially a practical one - an applied rather than a theoretical science - it makes sense to expect the practitioners to produce research' (Swigger, 1985: 108), the current study attempted to evaluate the contributions of Arab librarians to LIS literature. The study identified 117 Arab librarians who published 197 (12.9%) articles in eight LIS journals for the period between 1981 and 2010, compared to the results of the related studies in this context. Of these, 178 (90.35%) articles were written by only one author. In average, one librarian author published 0.59 refereed articles. In regard to the authors' affiliations, the study produced a list of the most productive libraries with the highest number of published articles. The study suggests that it will be more important to conduct a further investigation in order to reveal the role of Arab institutions in supporting the research and publications of professional librarians.

Based on the results of the current study, the proportion of contributions of Arab librarians to the LIS literature seems weak. Although academic writing is one of the most important activities academicians can do, the study suggests that it is also important for those who are working as practitioners and dealing with reality closely. For librarians as professionals, academic writing can provide an important kind of self-education, as Orne argues:

I would urge you to write, not because it is a good thing, not because it is nice to see your name in print, not even because it is relevant to full membership in our society, but rather because you will really get to know a field only if you contribute to it. (Orne, 1981: 4).

Recommendations

In terms of scholarly communication, the study recommends librarians to participate in regional and international conferences because attendance at those conferences is a requirement for the career advancement of many librarians, particularly those who work in colleges or universities. Moving from simple attendance to poster session or to paper presentation is viewed as the natural progression for the professional development of an academic librarian (Vega and Connell, 2007).

For further research, it will be useful to conduct an investigation in order to reveal the librarians' contributions to the non-peer-reviewed literature such as monographs, books, and general magazines. In addition, the author suggests further research to examine the relationship between LIS education and LIS productivity in the Arab world.

The author thinks that it is important for Arab librarians to be aware of ongoing research and professional development through the following recommendations of the Canadian Academic Research Libraries CARL (2010: 9) for librarians:

- Research and publication contributions through writing, editing, refereeing or reviewing of books, articles or reports.
- Conferences contributions through presentations to professional or scholarly associations/ meetings.
- Formal study -: taken to broaden subject or professional knowledge and may include study for advanced professional and/or related academic qualifications.
- Teaching teaching courses in areas of librarianship, archives or other academic disciplines.
- Conference management planning, organizing or conducting professional programs, workshops, seminars or conferences.
- Professional Associations active participation in professional associations which may include holding executive office, serving on committees, etc.
- Active engagement in community initiatives especially those associated with their area of professional or subject expertise.
- Staying informed ability to stay abreast of research in a specific area to support a research agenda or to support other work as a librarian within the library.
- Research models and methods knowledge of the fundamentals of qualitative and quantitative research methods including the research process (e.g. question formulation, peer review, etc.).
- Grant writing knowledge and pursuit of avenues available for grants to facilitate research work.

It seems more important to conduct different studies focus on the following issues:

- motivations of Arab librarians to engaged in research;
- the role of academic universities in supporting Arab librarians to publish;
- the requirement for scholarship by librarians at Arabic universities;
- information-seeking behaviors by Arab librarians as a researchers;

- why many librarians do not publish and;
- what are the problems faced by librarians who publish?

At the end of this study, the author recommends Arab librarians to engage in research and to publish regularly. Doing research and publishing are not only criteria for the promotion of professional library staff, but will also garner and strengthen their professional and research recognition in the academic community.

Notes

- 1. *AL-FIHRIST* is a Scholarly Refereed Journal published by the Bibliographic Services Center, National Library and Archives in Cairo, Egypt.
- 2. *Ialam* (means Learn or Know) is a scholarly refereed journal published by the Arab Federation for Libraries and Information (AFLI) in collaboration with King Abdul Aziz Public Library in Riyadh, Saudi Arabia.

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