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Resource-sharing through an inter-institutional repository Motivations and resistance of library and information science scholars

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Abstract

Purpose – The purpose of this paper is to be concerned with the motivations and resistance among an institutional repository (IR) stakeholder – the Library and Information Science (LIS) academicians – with respect to Green Road open access publishing in an inter-institutional repository.

Design/methodology/approach – The answers were identified from 47 LIS faculty from three library schools in Malaysia who reported awareness of what an IR is and having had experience in contributing resources to digital repositories. Data were collected using survey and interviews.

Findings – The results highlighted the LIS faculty on their motivation to share their intellectual profile, research and teaching resources in an inter-institutional repositories and why the reluctance in contributing. The study reveals that the major motivation to share resources for those practicing self-archiving is related to performance expectancy, social influence, visible and authoritative advantage, career benefit and quality work. The major resistance to share scholarly research output through self-archiving in institutional repositories for those practicing self-archiving is concern on plagiarism, time and effort, technical infrastructure, lack of self-efficacy and insularity.

Practical implications – Knowing what conditions predict motivation and resistance to contribute to IRs would allow IR administrators to ensure greater and more effective participation in resource-sharing among LIS academic community. If this resistance is addressed aptly, IRs can be of real benefit to their teaching, scholarship, collaborations, and publishing and to the community that they serve.

Originality/value – The first study that has explored the ways LIS academics respond to a situation where knowledge sharing in academe has now been made mandatory through an IR and what makes them resist to do so.

Keywords Digital libraries, Open access, Knowledge sharing

Paper type Research paper

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Introduction

Institutional repositories (IRs) emerged around 2002 when major research-intensive universities in the USA and the UK launched their own repository systems. Foster and Gibbons (2005) define an IR as "an electronic system that captures, preserves and provides access to the digital work products of a community". Crow (2002) and Ware (2004) characterize the following features of an IR:

- it is institutionally defined, and it captures only the intellectual property of the host institution, such as purely scholarly work or administrative, teaching and research materials, both published and unpublished;
- it is open and interoperable, and the primary goal is to disseminate the institution's intellectual output;
- it is cumulative and perpetual, and this carries with it a long-term obligation on the part of the host institution to preserve IR content; and
- it contributes to the process of scholarly communication in collecting, storing and disseminating scholarly content.

Authors and researchers can deposit materials in IRs, subject to copyright, with the host institution that provides the infrastructure for these materials to be properly organized, archived and disseminated. Prosser (2003, p. 168) noted that repositories serve as a central archive, "representing a CV that provides a complete list of [an individual's] research over the years". Additionally, archiving in IRs allows the widest possible dissemination of an individual's work and might, therefore, help scholars attain tenure and stature.

In research universities, IRs are predicated on contributions by their stakeholders which include both academic and non-academic staff; those involved in teaching and research; and both postgraduate and undergraduate students. Each of these groups contains potential authors and readers of the materials in an IR, and the contributions of authors are critical to the success of an IR. As such, whether IRs become a part of the intellectual infrastructure depends on the extent of the university's community contribution. Shearer (2003) argues that the success of an IR should be determined by its use and one of the measures of usefulness is contribution of content. Faculties are typically best at making a major contribution to an IR, by creating, not preserving, new knowledge, because they are becoming so involved in producing scholarly works and participating in the evolving scholarly communication process. As IRs are flourishing to preserve scholarly output and to make it openly accessible, more and more faculty members are in favour of providing open access (OA) to the universities' research output, maintained either institutionally or on a subject basis.

IRs are now becoming a component of the technical infrastructure in universities and libraries worldwide, and a favoured option for providing OA to research output. The term OA is usually applied to the context of scholarly publications and data, and means their free availability on the web for reading, data mining and reuse, in contrast to other types of freely available web content (Suber, 2012). OA has been practiced since the World Wide Web was launched, but the term itself was taken into wider use due to the development of IRs. OA for peer-reviewed journal articles can be achieved in two major ways (Harnad *et al.*, 2004), by publishing in journals that make the content freely available (Gold OA) or by the author or a third party making a copy of the article or the

preceding manuscript available somewhere else on the web, for instance, in a subject or IR (Green OA).

Research universities in developing countries have established IR services with the aim to enhance the visibility and impact of the research generated within that university (Abrizah, 2010; Ezema, 2013; Rahman and Mezbah-ul-Islam, 2014). At the same time, the university research process increasingly involves the use, generation, manipulation, sharing and analysis of digital resources. The development of the IR services is related to the OA movement which seeks to make valued research outputs openly available and globally visible by encouraging academics to place their publications into repositories. Ezema (2013) found that OA publishing has been perceived not only to increase the chances for use and exchange of ideas among scholars within similar disciplines in Nigeria but it has also been envisaged to increase the global ranking of Nigerian universities and researchers who have published their works in the repository. Ruiz-Conde and Calderón-Martínez (2014) substantiated this vision through their analysis of the top 100 university repositories, revealing that the greater the number of articles published by the academic staff of a university in impact-factored scientific journals the greater the size of its IR. This result leads us to conclude that researchers who publish in prestigious journals favourably view the self-archiving function of the institutional repositories of their universities, thus providing the repositories with quality scientific content. The results may indicate that repositories with a larger digital academic supply are associated with the production of demonstrated scientific rigor. However, not every IR adopts the principle of OA, and it is possible for the institution to restrict the access to only its members (www.opendoar.org). Research-intensive universities in Malaysia, for example, allow access to some theses, dissertations and post-prints of articles to members of the institution only (Abrizah, 2010). This characteristic fits Lynch's (2003, p. 2) framework for institutional repositories:

[...] a set of service that a university offer to the members of its community for the management and dissemination of digital materials created by the institution and its community members.

While Green OA IRs are becoming more prevalent in academic life, the disappointingly small number of them in Malaysia reflects worldwide trends (Abrizah, 2009, 2010). The authors' previous experience concurs with that of Foster and Gibbons' (2005), in that there is no attraction, as such, of an IR to a faculty member. For an IR implementation to be successful, it is necessary to attract a critical mass of users. IR has been perceived as a potentially disruptive technology (Bell and Sarr, 2010). Disruptive technologies attract new users by developing and offering an improvement or an alternative to users who are dissatisfied with more established technologies. It has been postulated that anything that would allow faculty members to do some of their current research-related activities better and faster, and especially something enabling them to reach more of their colleagues, be read more, and be cited, would be enormously attractive. This paper is concerned with the activities and attitudes of an IR stakeholder - library and information science (LIS) academicians – with respect to Green Road OA publishing in IRs. There are some research studies which are close to this goal. To understand the requirements to provide an IR that will preserve and disseminate research materials created by or associated with universities, the next section presents a review of the literature concerning the academic community's attitudes towards OA publishing and

IRs. It was apparent from this review that there has been research which focused on the needs and potential contribution of faculty in this area.

Literature review

There have been several previous studies that looked at the academic community's attitudes to OA and their willingness to contribute to repositories. A survey of scholars randomly chosen from nine scientific disciplines from colleges and universities in the USA and Canada was conducted to determine faculty participation in depositing materials into digital repositories (Lawal, 2002). Physics and astronomers reported the highest participation, followed by mathematicians and computer scientists, engineers, cognitive scientists and psychologists and biological scientists. Lawal (2002) found that those who reported participation cited the dissemination of research results, visibility and the author's exposure as reasons for depositing their work. Reasons for non-participation included publisher policies, relevance to their field and technological constraints. In contrast, Pelizzari's (2005) survey of 62 social science faculties indicated that all respondents were aware of OA materials and more than half declared that they already had OA materials freely available on the web. Pelizzari's report implies positive acceptance of OA principles among academic staff of the social science discipline. The most acceptable uses for an author's work were the free version of the materials, followed by the possibility to print, save and copy. The majority refused the possibility by other people to modify the deposited materials.

Rowlands *et al.* (2004) found a low level of preference among author–researcher communities to deposit their work in IRs. They reported that the level of awareness on the alternative business model of OA publishing and copyright issues was alarmingly low among the research community. Fifteen per cent of researchers replied that they had not deposited and had no further intentions to deposit their work in an IR, which showed a significant level of reservations about quality and preservation in an increasing digital information landscape (Rowlands *et al.*, 2004). Another large US survey of authors by Rowlands and Nicholas (2006) also demonstrated a general low level of knowledge and motivation to use IRs. Van Westrienen and Lynch's (2005) European survey likewise reported low faculty participation in IRs. Their article identified several reasons for non-participation by faculty, including:

- difficulties informing faculty and convincing them to participate;
- confusion and uncertainty about intellectual property issues;
- scholarly credit and how the material in IRs would be used;
- · the perception of OA content being of low quality; and
- a lack of mandatory policies for depositing manuscripts.

Correspondingly, Swan and Brown (2005), who investigated author self-archiving behaviour, discovered that there were a substantial proportion of authors unaware of the possibility of providing OA to their work. Only 30 per cent of the 1,296 respondents used specialized OAI search engines to navigate the OA repository and only 10 per cent of the authors knew of the SHERPA/RoMEO list of publishers' copyright permissions policies with respect to self-archiving (www.sherpa.ac.uk/romeo/). More people opted for putting their work on a website than have used an institutional or subject-based repository. However, a vast majority of authors would willingly comply with a mandate

from their employer or research funder to deposit copies of their articles in an institutional or subject-based repository. Swan and Brown (2005) noted that authors' reluctance to self-archive their work was due to the perceived time required and technical difficulties in carrying out the activity. Cullen and Chawner (2010, p. 144) reported that, while the concept of an IR and Green Road OA to research publications had some appeal, the reality of depositing presented barriers to many New Zealand academics. They pointed out that the message that publishing in OA forums has clear advantages in terms of increased citation, if not scholarly reputation "has not been taken on board by the academic community".

Foster and Gibbons (2005) interviewed 25 professors to investigate the factors affecting contribution. They noted that the single most beneficial use of IRs to researchers is visibility, as they want other scholars to find, use and cite their work. Foster and Gibbons also identified reasons why faculty did not submit their content, such as copyright infringement worries and disciplinary work practices (e.g. co-authoring or versioning). Faculty members perceived that IR contribution involved additional work, such as metadata creation for contributed objects. Davis and Connolly (2007) reported that Cornell's IR is largely under-populated and under-used by its faculty, as the Cornell faculty have little knowledge of and little motivation to use the repository. Most faculty used alternatives to IRs, such as their personal web pages and disciplinary repositories. Among the many reasons given for not using the IR are: redundancy with other modes of disseminating information, confusion with copyright, fear of plagiarism, associating one's work with inconsistent quality and concerns about whether posting a manuscript constitutes "publishing". Those collections that experience steady growth are collections in which the university has made an administrative investment, such are requiring deposits of theses and dissertations into the IR.

A few researchers applied social exchange theory to IRs where it is assumed that faculty may consider cost (Gadd *et al.*, 2003; Foster and Gibbons, 2005) and benefit factors (Kling and Spector, 2003; Cronin, 2005; Kankanhalli *et al.*, 2005; Swan and Brown, 2005) implicitly in terms of IR contribution. In addition to cost and benefit factors, Nahapiet and Ghoshal (1998), as cited in Kim (2007), suggested that three other factors – trust, identification and pro-sharing norms – influence the motivation to exchange knowledge. Kankanhalli *et al.* (2005) used these factors as contextual factors affecting the contribution to knowledge repositories. Trust indicates belief in good intent and competence of other actors, such as a university and users. Identification indicates faculty members' concerns with collective outcomes, membership and loyalty towards universities. The IR literature uses the term "pre-print culture" instead of "pro-sharing norms" – where researchers distribute drafts of research articles before they have been peer reviewed to colleagues around the world – as a factor (Kim, 2007).

Based on the aforementioned assumption, Kim (2007) investigated the factors that motivate or impede faculty contribution to IRs where she suggested the extrinsic and intrinsic benefits relating to IR contribution. Extrinsic benefits include accessibility, publicity and trustworthiness of documents in IRs, professional recognition, institutional recognition and academic reward. Intrinsic benefits concern altruistic intention of and self-interest in the IR contribution. Cost factors relate to copyright concerns and the additional time and effort required making the IR contribution. Kim, who opined that trust and identification are considered important factors in the IR context, also incorporated contextual factors. The survey was conducted on a sample of 67 professors whose materials were deposited in the IR of a major research US university revealed that the benefit factors were more influential than cost or contextual factors. In her 2011 study, Kim sampled 621 professors and questioned them about motivations for, and hindrances to, faculty contribution to IRs where she found that the major motivational factors are preservation and copyright (Kim, 2011).

In Malaysia, faculty contribution is considered one of the success factors for an IR even though several studies have found low rates of faculty submissions (Abrizah, 2009, 2010) and that the majority have not fully embraced self-archiving in institutional repositories (Singeh *et al.*, 2013). It was found that, in Malaysian universities, this transformational technology was introduced in the conservative, controlled manner associated with stereotypical academic culture, and manifested as a lengthy and complicated set of policies (Abrizah, 2010) and faculty were too cautious (Abrizah, 2009) and, so, expected changes never materialized. Abrizah's studies found that the challenges for an IR are not in the technical implementation, but in affecting the cultural changes necessary for it to become an integral part of the activities of a research institution. Cultural, rather than technological, factors limit the use and development of IRs. Her findings concur with other literature which suggested that ingrained behaviours, inertia, indifference and resistance to change hamper the adoption of the working practices needed to support the IR (Ware, 2004).

As has been widely reported elsewhere, researchers and faculty, although aware of what an IR is, do not embrace the concept, and repositories generally have not filled up as envisioned (van Westrienen and Lynch, 2005; Davis and Connolly, 2007; Cullen and Chawner, 2011; Sawant, 2012). Harnad (2006) provides a comprehensive list of faculty concerns about self-archiving in IRs. Some of these concerns result from misconceptions and a lack of understanding of what OA and IRs actually mean. Japanese psychologists, for example, felt that an IR is not a place for self-archiving, but for digital publishing of Japanese articles (Sato *et al.*, 2012). However, Coonin and Younce (2010, p. 118) indicated that "open access publishing is now an accepted method of scholarly communication, although penetration of open access publishing has been much slower among the social sciences". Furlough (2010) further noted the slow penetration in the social sciences and highlighted the need in researching the attitudes and behaviour of researchers in specific fields to understand how OA can support their needs as an author.

Objectives

In this paper, a core research issue is posed: *how can an inter-institutional repository for an LIS scholarly community be useful and attractive enough to be incorporated into their work routines*? LIS scholars are chosen because of the following assumptions:

- they, in general, have a good understanding of what OA and IR actually mean;
- they are aware of the existence of repositories and the IR advocating tools to help the academic community establish their intellectual profile and facilitate collaboration; and
- they are informed of the concerns pointed out that need to be addressed by IRs.

From the perspective of the LIS academic community, IRs promised significant change for academic libraries and librarians envisioned enlarging their collection development scope to include locally produced scholarship and an expansion of library services to embrace scholarly publication and distribution.

Inspired by a major user research study on re-engineering an IR using an anthropological approach (Bell and Sarr, 2010), the authors seek to determine if an inter-varsity repository based in a research-intensive university may attract the LIS community's interest to share their resources. The following research objective is addressed: *to understand the motivation and resistance among LIS scholars to share their intellectual profiles and resources in an inter-institutional digital repository*. Scholars in this study refer to researchers or professionals whose purpose is to generate and disseminate scientific knowledge. Based on this research objective, key questions guiding this research include:

- *RQ1*. What motivates LIS scholars to share their intellectual profiles, research work, and teaching resources in open access?
- *RQ2.* What are the deterrents that LIS scholars face in contributing to open access repositories?

Method

As a case study, both quantitative and qualitative data collection methods were used for the current study. The LIS academics community from library schools in Malaysia was chosen as the case setting.

Malaysia has three library schools offering the library and information science program at the postgraduate Master's and Doctoral levels. All three schools, located in the Klang Valley (Kuala Lumpur and Selangor state) are included in the study. Altogether, there are 124 LIS faculty members; the University of Malaya (UM) with eight teaching staff, the International Islamic University Malaysia (IIUM) with four teaching staff and MARA University of Technology (UiTM) with 112 teaching staff. As a small sample would cripple the generalizability of the study, the research strategy can be identified as a sequential use of survey method and interviews, which is useful for increasing validity of variables and research findings (Creswell, 2003).

For the quantitative investigation, a total of 94 faculty members from these 3 universities were randomly sampled by using the Krejcie and Morgan method with a confidence value of 95 per cent. Questionnaires used in previous studies (Abrizah, 2009; Singeh *et al.*, 2013) were revised and self-administered to the respondents. Responses were received from 68 faculty members (72.3 per cent response rate). Consequently, the authors analyzed 47 responses who reported both awareness of what an IR is and having had experience in contributing resources to digital repositories. As such, a total of 47 (69.1 per cent) of these respondents reported having had self-archiving experience, whereas 21 (30.9 per cent) reported having had none. In the survey (n = 47), respondents were also asked to indicate to what extent they agree or disagree with the "motivation" and "reluctance" statements. The measurable scales *strongly disagree*, *disagree*, *agree*, and *slightly disagree* have been merged together as "agree".

For the qualitative investigation, the LIS academics who reported having had self-archiving experience were invited to participate in an interview. To gauge their reaction and receptivity towards an inter-institutional LIS scholarly resources repository (available at: http://lis.fsktm.um.edu.my), an email was sent to all 47 academics inviting them to visit (e.g. browse, search, download) the website and participate in an interview. The participants contained both senior and junior faculty

members. A total of seven scholars (UM1-UM3, IIUM1-IIUM2, UiTM41-UITM42) indicated their willingness to be interviewed and the other 40 (UiTM1-UiTM40) requested that the interview questions be answered via email. Therefore, an open-ended semi-structured interview took place either face-to face or through emails from March to July 2013. The interview questions were loosely structured around four topics:

- (1) usefulness of the repository;
- (2) motivation to share resources in a repository;
- (3) willingness to self-archive; and
- (4) barriers in sharing resources in a repository.

The interview transcripts were analysed deductively based on the pre-defined set of topics.

The repository that the interview participants were requested to visit is based at the University of Malaya, and had been developed to manage and disseminate Malaysian LIS scholarly resources. The IR's basic function is to serve as a long-term storage and access point for digital resources created by LIS academics. The workspace allows LIS academics to:

- have their own web-based file system, where they can organize their work according to their own system;
- · search their workspace; and
- prepare their resources and publications for entry into the institutional side of the repository.

Portfolio pages provide the academics with their own personal showcase or web CV. The portfolio page may include descriptive information (such as title, contact information and research or teaching information), as well as materials in the repository, or links to publications elsewhere. The repository, at present, adopts a policy of "opt in" (copyright is obtained after asking and receiving permission from the copyright holder) and "opt out" (copyright is not obtained, unless explicitly told not to do so by copyright owners).

Results

RQ1. What motivates LIS scholars to share their intellectual profiles, research work and teaching resources in open access?

The study highlighted the responses from LIS academics in Malaysia on their motivation to share their intellectual profiles, research and teaching resources in an inter-IR, and why there may be reluctance in contributing to this repository. The top major motivation to share resources for those practicing self-archiving is related to performance expectancy (Venkatesh *et al.*, 2003), that is, defined in this current work as the degree to which the author expects gains with knowledge sharing in research performance, thus, increasing his/her personal merits (statements 1, 3, 4 and 5). The scholars sampled in general agree that sharing their academic profile and resources would bring about more prestige for academicians (statements 2, 6 and 17). The LIS academics, in general, agree that they find it easy to share resources through an IR and that knowledge sharing through an IR increases communication of research output and readership.

Findings also suggest that social influence (Venkatesh *et al.*, 2003) (i.e. defined in this current work as the degree to which an author is influenced by peers or fellow researchers and the university to share knowledge, as well as the degree to which an author may influence his/her peers to share knowledge) motivates sharing of intellectual profiles and resources in an IR (statements 15, 18, 19 and 21). The LIS academics tend to agree that they want to self-archive resources because their institutions, colleagues, other researchers and students think they should do so. There are a few respondents (7 and 14.9 per cent) who disagree that resource sharing through an IR is not time-consuming. Table I presents the findings of the motivation to share resources based on a ranking of mean scores, indicating that all motivation statements received an agreeable response.

Interview findings indicate that LIS scholars, in general, believe that resource sharing in an OA repository is increasingly prevalent in their field; however, they report a variety of OA experiences and enthusiasm. In terms of usefulness of the inter-institutional LIS repository, three types of responses emerged:

- (1) those who found the repository useful or very useful and relate specific instances on the usefulness of the repository to research and teaching;
- (2) those who provide general remarks about the usefulness of an IR; and
- (3) those who found the repository not useful at all.

These interpretations are presented in Table II.

Findings from the interviews on motivation to share show that most of the quotations were somewhat associated with perceived visible advantage (i.e. the extent to which a scholar believes that sharing or publishing in OA would enhance the visibility of publication). "I enjoy the idea of my work being available in Google Scholar searches" (UM1); "The opportunity for my work to be cited" (UiTM31); "Allow more people to see my work" (IIUM2); "Increase the attention of my research" (UiTM41); "I want my papers out there" (UM1); and "Improve visibility of my research" (UM2) are some of the remarks made. One scholar expressed that:

"Since there is a possibility that our works will be downloaded by other researchers, then we know the high possibility that our works will be cited and this is extremely good" (UiTM12).

Another said "Downloaded 48 times? I am very pleased!" (UM3). These findings are consistent with that of the survey indicating visibility (Statements 1 and 4 in Table I) as the top major motivation.

Although many scholars in this study agree on the authoritative advantage (i.e. scholars believe that sharing in OA increases author's authority) of knowledge sharing through the inter-institutional repository (items two and six in Table I), only two responses regarding this were highlighted during the interview: "LIScholar has well-known authors, it makes me prestigious" (UiTM42) and "People will be aware of my reputation" (UM2). One scholar (UiTM12) opined that as having an IR can enhance an institution's profile ("Perhaps it may help institutions for examples, UiTM to achieve RU[research university] status") and the LIS profession ("Perhaps make LIS researchers well-known and scholarly").

The perceived career benefit associated with a scholar believing that sharing via OA is helpful in developing their academic career is also very seldom mentioned in the interviews. "The opportunity to get PhD students and the chance of being invited as collaborators in research" (UiTM31); "Helpful for getting research grant and project"

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Statement no.	I am motivated to share my profile and resources in an institutional repository because	Disagree (%)	Neutral (%)	Agree (%)	Mean	Inter- institutional
1	I believe that my research work in digital and institutional repositories makes my work more visible to society	0 (0)	6 (12.8)	41 (87.2)	6.04	repository
2	I believe that my research work in digital and institutional repositories would increase my profile and bring about more recognition for me	0 (0)	6 (12.8)	41 (87.2)	5.98	739
3	I find knowledge sharing through digital and institutional repositories useful to disseminate	0 (0)	8 (17.0)	39 (83.0)	5.98	
4	my research output I believe that my research work in digital and institutional repositories is a very cheap means to make my work available to the world	0 (0)	7 (14.9)	40 (85.1)	5.94	
5	I believe that my research work in digital and institutional repositories makes it easier for me to connect with other researchers worldwide	0 (0)	6 (12.8)	41 (87.2)	5.89	
6	I believe that my research work in digital and institutional repositories will bring about prestige to myself and my institution	1 (2.1)	8 (17.0)	38 (80.9)	5.77	
7	Learning to share resources in digital and institutional repositories is an easy task for me	2 (4.3)	9 (19.1)	36 (76.6)	5.51	
8	I find knowledge sharing through digital and institutional repositories increases the communication of research output	1 (2.1)	13 (27.7)	33 (70.2)	5.319	
9	I find it easy to get through digital and institutional repositories to do what I need to do	3 (6.4)	12 (25.5)	22 (46.8)	5.28	
10	I find knowledge sharing through digital and institutional repositories increases readers' chances to know	3 (6.4)	10 (21.3)	34 (72.3)	5.277	
11	I find knowledge sharing through digital and institutional repositories allows readers to find my articles easier	1 (2.1)	13 (27.7)	33 (70.2)	5.277	
12	I find knowledge sharing through digital and institutional repositories allows more people to see my research work	3 (6.4)	10 (21.3)	34 (72.3)	5.213	
13	I believe depositing my research work in digital and institutional repositories will increase readership	1 (2.1)	12 (25.5)	34 (72.3)	5.17	
14	I am very skilful at depositing materials for knowledge sharing through digital and institutional repositories documents/articles	4 (8.5)	11 (23.4)	32 (68.1)	5.17	
15	My institutional repositories documents a notes my research through depositing in digital and institutional repositories	2 (4.3)	18 (38.3)	27 (57.4)	5.085	Table I. Survey responses on
16	Using digital and institutional repository technology makes the open access publishing process fast	3 (6.4)	14 (29.8)	30 (63.8)	5.021	motivation to share profiles and resources in IRs
	process fast			(con	tinued)	resources in IRS $(n = 47)$

EL 33,4	Statement no.	I am motivated to share my profile and resources in an institutional repository because	Disagree (%)	Neutral (%)	Agree (%)	Mean
	17	Academicians who support knowledge sharing through deposit/institutional repository articles have more prestige than those who do not	3 (6.4)	14 (29.8)	30 (63.8)	5.021
740	18	My colleagues think that I should share my research work through deposit/institutional repositories	3 (6.4)	21 (44.7)	23 (48.9)	4.957
	19	Other researchers think that I should share my research work through depositing/institutional repositories	0 (0)	21 (44.7)	26 (55.3)	4.893
	20	Knowledge sharing in digital and institutional repositories is not time-consuming	7 (14.9)	13 (27.7)	27 (57.4)	4.87
	21	My students think that I should share my research work through depositing/institutional repositories	2 (4.3)	26 (55.3)	19 (40.4)	4.809
Table I.		= strongly agree; 6 = agree; 5 = slightly agree; 4 = strongly disagree	= neutral;	3 = slight	tly disagre	ee; 2 =

(UiTM31); "Might help me in promotion exercise" (UiTM41); and "They don't see what I publish, but they want to see where I publish" (UM3).

There seems to be a palpable unease among some researchers about the idea of sharing their resources and academic profile in the repository. Scholars who have less experience in research were less enthusiastic about sharing as reflected in the following responses: "I am motivated to share if I have a good research" (UiTM20); "Only those who have established and expert in their own field would want to share their profile & research work" (UiTM24); and "And when I'm expert in this field, I will share my resources" (UiTM29). These remarks seem to indicate that an IR is equated with the following concept: well-known, expertise, credible and scholarly. The current study found that sharing in OA is associated with quality of resources as mentioned by the following early-career LIS scholars:

Yes, if I'm really satisfied with the quality of my work, then the work is suitable to be shared globally (UiTM7).

What do they gain by doing this [upload content]? Reward? Do we have quality of content? (UiTM33).

RQ2. What are the deterrents LIS scholars face in contributing to open access repositories?

What do the LIS academics think is inhibiting them from sharing their research work in digital and institutional repositories? Findings from the survey indicate that the major resistance to share scholarly research output through self-archiving in institutional repositories for those practicing self-archiving are the following concerns: plagiarism that others might alter their work without their permission, the newness and size of the repository and copyright. The least important obstacles for those who said yes to

Perceived usefulness	Sample incident 1	Sample incident 2	Sample incident 3
Those who found the repository useful or very useful, and relate specific instances on the usefulness of the repository to research and teaching (10 scholars)	Extremely very useful. I can refer to this LIS repository to identify researchers with certain specialization so that I can invite them to collaborate in my research endeavour. Definitely very useful as archiving here will help to build my profile and portfolio so that anyone who is interested with my research can have access to my publications	Yes definitely, LIS contribute a lot in my research works and also in preparing teaching resources or materials. I found many topics that suit to my area of study and my course. I also encourage my student to access this link (UiTM30)	Useful for me to find the current topic of interest and methodology used by LIS researchers in the other two universities. A good platform for self-archiving my own research works and make the research to be known and may lead others there to cite my work (UiTM39)
Those who provide general remarks about the usefulness of a single Malaysian institutional repository for LIS (34 scholars)	(ULIML) IR is a vital source in getting the list of research done in Malaysia. IR helps to determine the new research area with local setting. IR provides research finding which rich in local content. IR creates resource sharing among academic staff who are in the same subject area (UiTM6)	It is useful to have a Malaysian institutional research and teaching resources in a single repository. It can be shared, explored and expanded. By having this IR, we can find other researchers who have the interest/expertise, or have the expertise that we need, and we can collaborate with them to do new research or expand the existing research. It is useful for our	The IR is useful to check the topic of research in the field of LIS. It is also useful because we can obtain an overview of the development of LIS in Malaysia (UiTM25)
Those who found the repository not useful or not useful at all (3 scholars)	Not useful at all. Hardly used for teaching or research resources (UiTM2)	references and avoids duplication or repetition works (UiTM18) In my case I will not use LIScholar as we already have our own local system to do so. In my opinion, it is not necessary to share teaching resources in a multi-university community environment (UiTM4)	For those who are doing extensive research they might find this IR useful, but for those like me who are not, they can find sufficient materials from Google Scholar (UiTM24)
Table II. Interview findings on LIS scholars' perceptions of an inter-institutional repository's usefulness			Inter- institutional repository 741

self-archiving was: depositing their works with works from other repositories; low visibility and low prestige and subjecting their work to a quality control process. Table III presents the findings of the conditions that inhibit the academics to share resources based on a ranking of mean scores.

However, findings from the interviews reported different conditions that deter the LIS scholars in this study to share their resources. Surprisingly, concern about plagiarism and falsifying data in scholarly works was mentioned only three times ["How are we going to make sure that our research works are not plagiarized?" (UiTM4); "Great project, though I am somewhat worried about plagiarism" (UIA3); "Potential misuse of knowledge, may contain false data" (UiTM33)], although plagiarism received the highest agree response (Item 1 in Table III) as the resistance to OA sharing. One researcher cited lack of trust sharing as a deterrent – she expressed concern about the "possibility of losing ownership of knowledge" and she was also "afraid the prospect of someone else receiving recognition and accreditation for the knowledge of another" (UiTM33).

Among the senior scholars, time and technical infrastructure were often quoted as the obstacles to OA knowledge sharing. The following are meant to be representative of the comments received from the interviews:

Senior [researchers] like us have little time to do all the clerical work of uploading, formatting, etc. If there are assistants who are willing to help, I'm sure many [researchers] would be happy to share (UiTM21).

Most of the time, unstable and slow network/internet access at the office will discourage me to contribute. This is critical especially to us senior lecturers who have time constraint due to 18 or more hours of teaching workload, administrative duties as well. I even have problem to email this answers (UiTM21).

Network problem [...] the server is always down and computer is always not responding. I am also busy preparing lectures and teaching modules, and involve in students activities (UiTM13).

Interview findings identified self-efficacy (i.e. the extent to which scholars perceives confidence in having research work published) or the lack of it as the major resistance to knowledge sharing, especially among early-career researchers. This is in consistent with earlier findings of LIS scholars' emphasis on quality as the concept-marker in OA knowledge sharing:

Don't feel my publications are good enough or have quality to be shared with others (UiTM39).

As a junior researcher, I prefer other people not to see all the write-up blunders, inaccurate research method and shallow coverage of a particular research. Submitting a snapshot of my research would be more preferable (UiTM23).

It is a challenging culture in knowledge sharing [...] no sharing of poor quality research works or teaching resources (UiTM15).

Don't feel my publications are good enough or have quality to be shared with others (UiTM37).

This may also be due to a level of insularity, as they viewed that the works of LIS researchers who have not been prolific authors nor have obtained higher academic positions might not be accessed by others:

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Statement no.	I resist sharing profile and resources in an institutional repository because	Disagree (%)	Neutral (%)	Agree (%)	Mean	Inter- institutional
1	I am concerned about plagiarism	9 (19.1)	10 (21.3)	28 (59.6)	4.500	repository
2	I am concerned that the university might do something with my work without my permission	9 (19.1)	13 (27.7)	25 (53.2)	4.361	
3	I am concerned that someone might want to change or delete my work	11 (23.4)	22 (46.8)	14 (29.8)	4.291	743
4	I am concerned about the newness and initially small scale of the repository	12 (25.5)	13 (27.7)	22 (46.8)	4.256	
5	I am concerned about other publishers owning the copyright of previously published material	12 (25.5)	12 (25.5)	23 (49.0)	4.221	
6	I am concerned that if I deposit my work in the university repositories I may not be able to publish it elsewhere later	12 (25.5)	12 (25.5)	23 (49.0)	4.221	
7	I am concerned that my work might not be preserved in the long run	12 (25.5)	13 (27.7)	22 (46.8)	4.210	
8	I am concerned about what would happen to my work if I move to another institution	13 (27.7)	13 (27.7)	21 (44.7)	4.210	
9	I am concerned that others might alter my work without my permission	13 (27.7)	13 (27.7)	21 (44.7)	4.198	
10	I am concerned about the effect of open access repositories on journal publishers	12 (25.5)	13 (27.7)	22 (46.8)	4.186	
11	I am concerned about the long term feasibility of the repository	12 (25.5)	14 (29.8)	21 (44.7)	4.151	
12	I am concerned about the effect of open access repositories on learned societies and associations	13 (27.7)	15 (31.9)	19 (40.4)	4.082	
13	I do not want to put my work with work that has not been peer-reviewed	16 (34.0)	14 (29.8)	17 (36.2)	4.058	
14	I am concerned that the university might expect them to pay to do it	15 (32.0)	16 (34.0)	16 (34.0)	4.047	
15	I do not have the necessary technical skills	15 (31.9)	13 (27.7)	19 (40.4)	4.024	
16	I prefer to make my work available only on my personal website	17 (36.2)	12 (25.5)	18 (38.3)	4.024	
17	I am afraid it might take too much time	17 (36.2)	14 (29.8)	16 (34.0)	3.989	
18	I prefer to make my work available only on the departmental website	18 (38.3)	13 (27.7)	16 (34.0)	3.942	
19	I perceive that few people would see my work there	18 (38.3)	13 (27.7)	16 (34.0)	3.942	
20	I perceive that the readership of the repository would be too broad and not targeted to my field of work	18 (38.3)	13 (27.7)	16 (34.0)	3.872	
21	I do not want my work to be deposited with work from other disciplines	21 (44.7)	13 (27.7)	13 (27.7)	3.837	
22	I perceive that the repository would have low prestige	19 (40.4)	15 (31.9)	13 (27.7)	3.826	
23	I do not want my work to be subject to a qualify control process	20 (42.6)	15 (31.9)	12 (25.5)	3.823	Table III. Survey responses on
	= strongly agree; 6 = agree; 5 = slightly agree; 4 = strongly disagree	= neutral;	3 = sligh	tly disagre	ee; 2 =	resistance to share profile and resources in IRs ($n = 47$)

Research and scholarly right things are credited, evaluate for quality, disseminated to the scholarly community and preserve for future use. However, not many of us new lecturers here, are willing to share and sometimes people asking for article that have quality and value (UiTM34).

The barriers in contributing to this repository, is due to the readiness of a viewer towards individual profile. The confident level to read, adopt & adapt any works by viewer should depend on the education level of contributor, people with Dr not their academic title, whether Professor or not. The contributor works may not be accessed by any parties due to this factor, as others will choose to read only those works owned by Professors (UiTM27).

One scholar described the resistance among her colleagues in these words:

The only barrier I can see is that if there is less writing, there will be less contribution. Motivation is needed from time to time to write a new research and to publish it (UiTM11).

It is clear that the low levels of publication will lead to a low level of spontaneous self-archiving and this reflects opposition to OA knowledge sharing.

Discussion and conclusion

The survey results depict that not every LIS academic surveyed is aware or familiar with self-archiving and the existence of IRs, although, in fact, there is little excuse for an LIS researcher not to know about OA publishing. Against the background of the findings above. the major motivations and resistance they think in sharing their academic profiles and resources are presented in Table IV. Consistent with the findings by Foster and Gibbons (2005), Kim (2007), Li (2011) and Cullen and Chawner (2011), the benefits of visibility and recognition for LIS academics and his/her works are suitable reasons to share resources online. Participants in this study also equated IRs with the following concepts: well-known, expertise, credible and scholarly, as found in other studies by Case and Higgins (2000) and Rieh (2002). The concerns relating to IR among the LIS faculties reflect to some degree the way in which repositories have developed in Malaysia, where, for the most part, IRs have been introduced for the worthy purpose of giving researchers a vehicle to enhance the availability of their publications by making them available via OA (Abrizah, 2010). Although IRs are gaining in momentum throughout academia, the LIS academics in this study seem to be cautious regarding IR contribution. Plagiarism, time consumption and technology are seen as a hindrance to self-archive articles, which have also been revealed in other studies (Davis and Connolly, 2007; Seaman, 2011; Swan and Brown, 2005; Covey, 2011; Cullen and Chawner, 2011) that delve into the concerns humanists have about IRs. Fear of low-quality work and lack of self-efficacy contribute to resistance against the inclusion of their scholarly work and teaching resources. It seems that much of the emphasis in regard to OA sharing and publishing was put on the notion of trust associated with quality assurance and trusted sources.

An important result of the study indicates that when the IR is part of a larger system that makes it easier for faculty to author and co-author their papers, and then preserve and self-publish their work effortlessly, faculty will adopt it and make it a success. As such, the system must become part of the workflow during LIS scholars' research process, support collaboration with LIS academics outside the institution, provide quantifiable evidence of use and allow LIS academics to control and showcase their work to others. It is foreseen that for the system to become part of the workflow during the research and writing phase, it must

	Sharing or publishing in open access	Inter- institutional
Motivations		repository
Performance expectancy	Would enhance research performance, thus, increasing his/her personal merits	repository
Social influence	Is influenced by peers or fellow researchers and the university to share knowledge; as well as the degree to which an author may influence his/her peers to share knowledge; enable them to connect and work with other academics; bring prestige to them and their academic institution	745
Visible advantage	Would enhance the visibility of publication; make their work available and visible to others; facilitate access to theirs and other academicians' works	
Authoritative advantage	Increases authors' authority	
Career benefit	Is helpful in developing academic career; alleviate their academic profile and bring about more recognition to them	
Quality work	Involves quality works and resources only; empower them to have control of copyright and access	
Resistance		
Plagiarism and falsifying data in scholarly work	Would stimulate copying and fabricating resources which contributes to the lack of trust in open access works	
Time and effort	Takes time and effort to manage versions and deposit articles, and scholars do not have the capacity and time to do the extra work	
Technical infrastructure	Requires services with user-friendly features, interactive interface, as well as tangible and immediate benefits that facilitate authors in their workflow	Table IV.Different types of
Lack of self-efficacy	Requires confidence that a scholar only deposits only quality and trustworthy resources	motivations and resistance to share
Insularity	Should be populated with scholars already known and recognised for the quality of their research	profiles and resources in IRs

support collaboration with users outside the institution, provide quantifiable evidence of use and allow the users to control and showcase their work.

This study has a number of limitations. It was an examination of attitudes; we did not observe knowledge-sharing behaviour. Moreover, we expected the participants to access the repository beforehand; we did not observe their usage and assumed that they did so before they answered the interview questions. This may explain why some of the responses were more general in nature.

Despite the limitations, the study has one implication for understanding resource sharing among scholars in an inter-institutional repository. Scholars control and create resources, but their respective institutions own these resources and it is expected that the resources be shared and used for the benefit of the scholarly community. Scholars would share resources because doing so has personal and professional benefits, not because their work organizations or the community they serve have the right to it. Knowing what conditions predict resistance to contribute to IRs will allow IR administrators to ensure greater and more effective participation in resource sharing among the LIS academic community. Knowledge of what makes authors more predisposed to self-archiving in IRs will pave the way for greater participation and involvement. This will eventually make IRs and self-archiving a success within research universities in Malaysia. Additionally, knowing whether Malaysian LIS authors would consider it obligatory to self-archive will help administrators to formulate policies regarding IR self-archiving. Finally, identifying the major obstacles to self-archiving will enable IR administrators to effectively resolve them by addressing each and every one of these obstacles.

This study has explored the ways LIS academics respond to a situation where knowledge sharing in academe has now been made mandatory through an IR and what makes them resist doing so. As pointed out by Kim (2007, p. 3), one should also uncover faculty members' perceptions of the costs and benefits of IRs "in order to better structure incentives and social mechanisms to foster contribution [to them]". This approach may be designed to help people in organizations "face resistance and cross the street" to actually manage the transitions experienced within organizational change. Quinn (2010, p. 74) wrote that the scholarly literature in digital repositories has given little attention to the psychology of resistance, yet the "ultimate of success of digital repositories depends on scholars and researchers to submit their work". Any change stirs up resistance and, as change is an inevitable part of organizational life, it is believed that *resistance* is correspondingly inherent and should be reframed, explored and worked, not eradicated or "fixed". If this resistance is addressed properly, IRs can be of real benefit to their teaching, scholarship, collaborations and publishing, as well as to the community that they serve. Future studies on how to address the resistance, identify strategies to reduce resistance or test the effectiveness of programmes to counter resistance will hopefully be conducted to provide us with a better understanding on how to address this problem.

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