

Strategies for building institutional repositories: a case study of content recruitment in Malaysian higher learning institutions

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ABSTRACT

Various strategies have been developed to ensure the success of the critical and challenging process of recruiting content for institutional repositories. This article presents an in-depth exploration of content recruitment strategies used by three Malaysian higher learning institutions in their institutional repositories. Through interviews with nine repository librarians, the study investigates the various methods used to acquire content, including mediated deposit, self-archiving, and promotion activities. The study reveals that setting up content deposit as a quality objective and key performance indicator (KPI) is a new and effective strategy used among the three case studies. The findings provide valuable insights into the approaches taken by these institutions to recruit content and offer practical guidelines for academic librarians in general. This study contributes to the growing body of knowledge on institutional repository management, highlighting the importance of implementing effective content recruitment strategies to ensure the success and sustainability of these repositories.

Keywords: Content recruitment; Institutional repositories; Open access repositories; Academic libraries; Scholarly communication.

INTRODUCTION

Institutional repositories serve as robust platforms for preserving an institution's scholarly output, which encompasses a wide range of materials created by faculty, researchers, and students. These materials may include, but are not limited to, presentations, working papers, conference papers, newsletters, electronic theses and dissertations (ETDs), journals with restricted circulation, and electronic archival materials. These repositories are important for increasing the visibility and accessibility of research output to stakeholders, as noted by Lappalainen and Narayanan (2023).

The development of institutional repositories is fraught with challenges, as has been extensively documented. Although institutional repositories have become a common

feature of academic environments, the recruitment of content into these repositories has remained a significant challenge for academic libraries, resulting in slow growth in deposited content from their initial development to the present. This issue has been noted by Abrizah (2009) and again by Posigha and Eseivo (2022), indicating that not much has changed in the intervening years. It is widely acknowledged that recruitment of content, rather than technology, is the most significant barrier to success, and gathering and providing service to stakeholders is the most challenging aspect of institutional repository development (Foster and Gibbons 2005). In his work, Harnad (2006) observed that institutional repositories frequently faced difficulties in expanding their collections and maintaining consistent workflows for content recruitment and this trend has continued over many years as highlighted by Lappalainen and Narayanan (2023).

Previous studies have confirmed the challenges faced by academic institutions and librarians in building up content in institutional repositories (Mark and Shearer 2006; Davis and Connolly 2007; Salo 2008). While some academics and researchers do submit their work through the submission form, the majority are unresponsive (Lam and Chan 2007). Despite the passage of more than a decade, as highlighted by Abrizah (2009) and more recently by Quinn (2023), faculty uptake has remained reluctant in spite of various innovative approaches and promotional efforts. As a result, the repository has experienced limited expansion and sluggish growth in the number of contents being deposited. In practice, most institutional repository content is not self-archived by the authors, librarians and support staff are harvesting or otherwise mediating deposits. According to Salo (2008), Britain and Australia have recognized that relying solely on voluntary faculty-initiated and faculty-performed self-archiving is not a sustainable approach for populating institutional repositories. As voluntary compliance is required, there is a need to develop effective acquisition strategies to ensure that repositories are populated with accessible content both locally and worldwide. Selecting the right content for recruitment in institutional repositories is crucial, as it plays a pivotal role in enhancing the visibility of research output and increasing citation rates, particularly for underrepresented works such as ETDs. This has been highlighted in a review by Demetres, Delgado, and Wright (2020), where making such works available in an institutional repository and discoverable by Google and Google Scholar has been shown to significantly improve their visibility and citation impact.

In Malaysia, the need for libraries to develop content recruitment techniques has been recognized for some time, with Abrizah's (2010) research highlighting the significance of encouraging scholars to self-archive and capturing pre-existing library collections. The present study aims to examine the strategies employed by Malaysian higher learning institutions to acquire content for their institutional repositories. This understanding will serve as a guideline for other academic institutions to grow content in their institutional repositories accordingly. The existence of 25 repositories registered with the global Directory of Open Access Repositories (OpenDOAR)¹ and 42 institutions registered with the Registry of Open Access Repositories (ROAR)² in Malaysia underscores the importance of ongoing professional development for academic librarians in the country.

¹ OpenDOAR. Available at: <https://v2.sherpa.ac.uk/opensoar/>.

² Registry of Open Access Repositories (ROAR). Available at: <http://roar.eprints.org/>.

LITERATURE REVIEW

One of the platforms used to attain open access research output is through institutional repositories, and earlier research has focused on several approaches applied in recruiting content. Content recruitment is an essential process for institutional repositories to add resources and make them freely available as part of certain institutions' research outputs. It is also crucial in keeping track of the available publications from the institution (Ukwoma and Okafor 2017). Librarians play a crucial role in the development and success of institutional repositories by actively populating them with content. As highlighted in a case study by Chan, Kwok and Yip (2005), reference librarians have an important responsibility in understanding and interpreting publisher policies and identifying strategies for content recruitment. This includes scanning websites, searching for working papers, technical reports, conference papers, theses and dissertations, university archives, and open access sources, as well as contacting authors to obtain permission to post relevant documents. In addition to content recruitment, reference librarians should also be involved in all aspects of institutional repository development, such as defining goals and scope, evaluating the system and content, implementing strategies and procedures, understanding publisher policies, working closely with faculty, providing repository-related services, and promoting the repository to relevant stakeholders.

The success of institutional repositories is closely linked to the strategies implemented by libraries to acquire content. As noted by Mark and Shearer (2006), various strategies are used to recruit content into institutional repositories, making this process crucial for their success. They classified the strategies into six categories: general promotional activities, depositing services, content harvesting, researcher bibliographies, usage/cite information strategy, and university policies. Mark and Shearer (2006) further described a unique strategy by some institutional repositories to attract researchers, i.e. creating researcher bibliographies as an additional access point. One notable example is the "Cream of Science" project in the Netherlands, part of the DARE initiative. The project involved selecting prominent scientists from participating institutions and making their complete publication lists accessible through their respective institutional repositories and a centralized harvesting service. Each author had a dedicated page with basic information and links to their publications. This initiative resulted in approximately 24,000 full-text publications becoming accessible. Similar efforts have been undertaken by the University of Rochester with its "Researcher Pages" residing within the institutional repository, and the Université Libre de Bruxelles, that incorporates the entire academic bibliography of its researchers into the institutional repository.

Mackie (2004) identified three phases of strategies to recruit content for institutional repositories, including initial strategies of appointing distinguished academics to establish contacts, follow-up strategies of checking copyright agreements and targeting supportive journals, and long-term strategies of importing information from faculty and departmental publications databases; however, obtaining content from academics and navigating publishers' copyright policies remain significant challenges. Lam and Chan (2007) utilized various strategies to gather content for their repository. They had to obtain permission from the original authors before uploading the harvested documents to the repository. In cases where electronic documents were unavailable, they implemented digitization. Overall, Lam and Chan's strategies were comprehensive and involved various approaches to gather a wide range of content for their repository. Their methods included:

- a) Browsing the websites of the research centers, institutes, faculty members, and departments to obtain full-text online research papers and publications.

- b) Surveying academic departments to collect working papers and technical reports.
- c) Searching the library catalog for conference proceedings.
- d) Examining boxes of unpublished research papers in the University Archives.
- e) Searching electronic databases and open access sites such as Web of Science and Directory of Open Access Journals (DOAJ) for researchers' articles to identify their publications.
- f) Contacting academic members personally to request their full publication lists and full-text materials.

Enforcing mandatory policies in self-archiving can be a reliable and long-lasting method to recruit content into institutional repositories. According to Swan and Brown's (2005) survey of authors conducted by the Joint Information Systems Committee and the Open Society Institute, the majority of authors would willingly self-archive if required to do so by their employer or funding body. However, implementing these policies can be challenging. Successful implementation often requires administrative support from the university to promote the policy among colleagues and faculty. Ghosh (2021) pointed out that universities face two challenges in ensuring compliance with institutional mandates: first, the process is currently labor-intensive and segregated, and second, there is a lack of strong incentives for researchers to comply with the mandates. Meanwhile, in universities in Southeast Nigeria, several methods were used to acquire content for the repository. The library encouraged professors to deposit their work in institutional repositories by emphasizing the benefits of publishing in institutional repositories over purchasing content from vendors (Ezema 2013). While requiring faculty to self-archive their publications was not feasible due to resistance, content was acquired directly from the publisher for books and journals alone, not for grey literature (Ezema 2013). To improve the process of self-archiving scholarly publications in institutional repositories, Mbughuni, Mtega, and Malekani (2023) suggest several strategies, including incentivizing self-archiving, offering support services, providing technical assistance, raising awareness, offering education and training, allocating more time and effort, and implementing open access policies.

Several practical strategies focus on adding potential existing contents into the repository, such as self-archiving mediated submission and digitization processes of library materials. Adam's recent study in Nigeria (Adam and Kiran, 2021) highlighted that mediated submission and digitization processes are other strategies used by institutional repository managers to manage their repository effectively. To establish a sustainable workflow, Shook (2018) transitioned from the self-submission model, which is often seen as problematic (Salo 2008), to the mediated deposit model. In collaboration with the director of the science library at Vanderbilt University, she trained science and engineering liaisons on how to add research to the repository. The training covered tasks such as copyright and publisher rights checking, writing basic Dublin Core metadata, performing OCR on items, and batch uploading using the Simple Archival Format Packager. Butterfield, Galbraith, and Martin (2022) suggest a practical approach to enhance the number of publications uploaded to a university's institutional repository by engaging a collaborative effort between institutional repository managers, librarians, and student employees for efficient content management. The proposed methodology involves leveraging the resources of the institutional repository manager and the contribution of student workers to encourage researchers to upload their works. The study reports a significant increase in the number of publications deposited in the institutional repository, with a 174% rise in the number of articles by the authors after the implementation of this approach.

In 2018, Bull and Schultz (2018) conducted a study discussing the workflow developed by Valparaiso University for harvesting metadata into the repository. The study found that the use of workflows resulted in a decline in overall record creation for ValpoScholar after an initial period of significant growth in summer 2016, with two batches (109 and 102, respectively) compared to the two prior years. However, the workflow helped to maintain an increase in the number of records of faculty-related scholarship, and Bull and Schultz (2018) emphasized its use in student worker support and future student staffing for sustainability, as well as to save time spent on organizing student training. Smart (2019) reported that a plan was devised by the Office of Digital Research and Scholarship's librarian team to increase the low faculty self-submission rates to the repository, using a combination of metadata harvesting workflow, semi-automated metadata record creation, and outreach emails to inform researchers about the open access policy and encourage them to upload their manuscripts to the institutional repository. Lappalainen and Narayanan (2023) recently described a semi-automated workflow that used a custom R script to harvest and convert content from Scopus, Web of Science, Dimension, and Unpaywall into the repository.

The strategies employed various academic institutions to populate their institutional repositories with content are diverse and include digitization of collections, harvesting from databases, and acquisition from or self-archiving by authors, highlighting the need for a focused study on these strategies as well as the challenges that need to be overcome to ensure their success.

OBJECTIVE AND METHOD

The objective of this study is to examine the content recruitment activities in institutional repositories in Malaysian Higher Learning Institutions. To achieve this objective, a qualitative research approach was adopted, and semi-structured interviews were conducted with librarians working in institutional repositories. The research question that drives this study is “What are the content recruitment strategies employed by academic libraries in Malaysia to populate their institutional repositories?”

Purposive sampling technique was used in selecting the participants of this study from three research universities in Malaysia. The inclusion criteria for selecting participants were as follows:

- (a) the institutional repositories are registered and listed in two international repository registries, OpenDOAR (<https://v2.sherpa.ac.uk/opensoar/search.html>) and Registry of Open Access Repositories (ROAR) (<http://roar.eprints.org/>),
- (b) a research university institutional repository,
- (c) institutional repository consists of Electronic Theses and Dissertations (ETDs) collection,
- (d) all are using EPrints software,
- (e) the institutional repositories' records are accessible by the researcher, and
- (f) the participants are willing to participate in research.

The data gathered during the interviews was used as the primary instrument for obtaining qualitative data. The participants were identified and verified by looking at the organizational chart from respective institutions' website. The researcher sent out a 'request to interview' email to the Office of Chief Librarian of each institution for approval to conduct the study. After obtaining the necessary approvals, the researcher contacted the participants to set an appointment before the interviews were conducted. Most of the

interviews were conducted by the first researcher herself during office hours at their workplaces. To ensure confidentiality, the participants were coded as follows: LA1, LA2, LB1, LB2, LB3, LB4, LB5, LC1, and LC2 and the institutions (A, B, C) were identifiable in the participant's code. Table 1 presents the demographics of the research participants. All participants were given a very short briefing on how the sessions will be conducted and asked to read and sign the consent letter before interviews conducted.

Table 1: Participants' demographic information

No	Participant code	Institution code	Position	Working experience in managing institutional repository	Academic qualification	Gender
1.	LA1	A	Senior Librarian	1-5 years	Masters	Female
2.	LA2	A	Senior Librarian	1-5 years	Masters	Female
3.	LB1	B	Senior Librarian	1-5 years	Masters	Female
4.	LB2	B	Senior Librarian	1-5 years	Bachelors	Female
5.	LB3	B	Senior Librarian	1-5 years	Masters	Female
6.	LB4	B	Senior Librarian	1-5 years	Masters	Female
7.	LB5	B	Deputy Chief Librarian	11-15 years	Masters	Male
8.	LC1	C	Senior Librarian	1-5 years	Bachelors	Female
9.	LC2	C	Deputy Chief Librarian	6-10 years	Bachelors	Female

The open-ended interviews were important as they allowed for greater flexibility in how the sessions were performed, designed, and adopted from previous studies. The list of interview questions is provided in Appendix 1. The interviews were conducted in the Malay language, audio recorded, transcribed, coded, and analyzed based on participant's responses to construct the key themes identified in this study. The interview sessions were conducted between February and August 2019, and the duration of each interview was about one to one and a half hours. Overall, the study used a rigorous and systematic approach in selecting participants, conducting interviews, and analyzing data to address the research question and achieve the study's objective.

FINDINGS

This study examines the strategies for content recruitment in institutional repositories. Four recruitment activities emerged in the interview data: (a) mediated deposit; (b) self-archiving; (c) promotional activities; and (d) using content deposit as the library quality objective to incentivize participation.

Mediated Deposit

Mediated deposit strategy for recruiting content in the institutional repository included three activities: (a) extracting content from various digital platforms; (b) depositing service; and (c) populating the repository from existing library collections.

(a) Extracting content from various digital platforms

As the activity name suggests, the content recruitment strategy of mediated deposit involves extracting content from various digital platforms, including the institution's databases and subscription database such as Scopus, to acquire and harvest content for deposition. Institution A's library verified the author's work through the institution's directory of expertise, Scopus, and Sherpa Romeo (to determine publisher copyright and open access archiving policies) to ensure full access to the content before deposition.

Institutions B and C also used the same approach of acquiring content from their respective databases and Scopus. LB1 explained that *"The institution's database is where any academics or researchers deposit their content, and the content is published there."* The same participant added that the sources of the content were extracted from the institution's database, faculty websites, and publishers' website, as well as digitized library collection, including books and conference proceedings.

Furthermore, in this strategy, the library obtains a definitive list of faculty publications from the library's Office of Service Unit. The list is generated after each audit session, encompassing publications by faculty members who actively participate in publishing activities, and retrieved from the subscription databases. LC1 explained, *"Normally, after the research university audit, the library will receive the listing."*

(b) Depositing service

The second strategy involves the library depositing publications on behalf of the campus community as part of its content recruitment approach. Participant LC1 stated, *"We do! Currently, the library performs the depositing task."* Requests are submitted either by the library or to the library for adding faculty members' published works to the repository. As LA1 explained, *"For theses...we usually receive the softcopies from the library acquisition department in the form of CDs. We check the candidate's agreement [either to agree or restrict open access] that is included in the thesis. We need to check the agreement. We always upload it, but if the student does not allow for public access, then we restrict the material from public. The upload process is usually done by staff, who upload the thesis together with the candidate agreement. We scan the candidate's agreement, we upload it with the thesis, and then an officer verifies to ensure that the metadata entered is correct or not. Once verified, we approve it for public access."*

In addition, librarians from the relevant specialty library may send e-mails to relevant faculty members, asking them to upload their publications to a central repository. LA1 suggested that the librarians are willing to go the extra mile by depositing the materials themselves, saying, *"If possible, we really want to deposit for them."* Furthermore, LB1 stated that if faculty members request the library to index and upload their publications into the repository, the library will receive the materials and upload their publications.

However, some faculty members may not have sufficient time to directly deposit their content into the repository and instead choose to submit their publications to the library. This time constraint is often attributed to other academic obligations and key performance indicators (KPIs), whereby faculty members are required to submit their research output to other databases and update their latest publications in the institution's system. Therefore, this depositing service plays a crucial role in populating the institutional repository with content. Additionally, the library also contributes to the repository by depositing theses and dissertations collection. According to LC1, *"For theses, we do not have to collect since we are the receiver. And we are the depositor for theses. And there is no problem."*

(c) Populating the repository from existing library collections

The third strategy involves populating the repository with content from existing library collections. The interviews revealed that various types of content were added to the repository, including conference papers, theses and dissertations, magazine and newspaper cuttings, slide presentations, images, scientific drawings, old bulletins, and galleries. Participant LA1 provided further information on each type of content as follows: *"For conference papers, if the institution's budget is used, lecturers are required to send a*

copy of the paper to the library. From there, we upload it to the repository. Alternatively, if there are hard copies of journals, such as old ones, we identify whether the authors are from our institution or not, and then we scan and upload them to the research repository."

One of the types of content that is populated in the repository through the strategy of populating content from existing library collections is theses and dissertations collection. Scanning and uploading theses and dissertations into the repository is a recruitment activity used to build its content. LB5 from institution B stated, *"At that time, we did not worry much because we had the hardcopy. For theses, we scan and upload as our target. When scanning is completed, we look for other materials that do not exist yet, such as newspapers and inaugural lectures."*

Magazine and newspaper cuttings, old institution magazines, newsletters, and weekly newsletters are all sources of materials used as content in institutional repositories, as stated by LA2. The slide presentation, image, or scientific drawing is another type of content that is uploaded to the repository, although it contains very few metadata components, and is processed by the library staff as appropriate. LA1 explained that staff members are responsible for scanning and uploading content to the repository, as well as making it accessible. They are occasionally required to upload slide presentations, images, or scientific drawings, but this is not a frequent occurrence.

In addition, old bulletins are also used to populate content from old newsletters from the library's collection. Staff members scan and upload the content to the repository, and make it accessible. LA1 indicated that they recently scanned and uploaded old pamphlets, which did not exist in online form, and added them to the repository. Furthermore, LA1 mentioned that the gallery section of the repository consists of old pictures of the institution, which are contributed by various departments, such as Corporate Communications Office (CCO) and the Medical Faculty. Staff members scan and upload these pictures, and insert watermarks before depositing them into the institutional repository. The Medical Faculty's request for digitization of old pictures has been given priority and is processed accordingly.

The institutional repository also includes previous conference papers, old conference papers and proceedings, and old books and book chapters that are part of the library's collection. To add these to the repository, the library obtains information from authors and proceedings held in its collection. LB1 stated that sometimes they receive old conference papers which have turned yellow and are difficult to scan, but if the papers are still in good condition, they scan and deposit them in the repository. LB1 added that the depository for conference papers is made restricted as they do not have permission to publish them to the public. LB4 mentioned that they scan old books and book chapters found in the library, and also search for titles online to add to the repository. The staff is responsible for scanning and depositing these materials in the repository.

Self-archiving

Self-archiving is a popular strategy used for recruiting content into institutional repositories. Institution A promotes self-archiving through organizing training sessions for depositors, faculty members and postgraduate students, and educating them about the institutional repository. According to participant LA1, training sessions are also offered to interested parties outside the institution, as she articulated *"During our client day, we set up a table at the main library where individuals can approach with questions regarding how to deposit their articles. We provide information about the necessary steps and*

encourage them to create an account to deposit their own articles into the repository. There has been some response from post-graduate students, but their numbers are not significant. Nevertheless, some post-graduates have already deposited their own articles" (LA1)

In Institution B, the primary approach to self-archiving content is through educating depositors. Librarian B1 emphasizes the role of faculty librarians in instructing faculty members about the institutional repository and its services, actively encouraging them to contribute their work. Reference librarians also play a vital role by recruiting authors to submit their content to institutional repositories and providing guidance on efficient searching and retrieval of scholarly materials from these repositories.

In Institution C, organizing workshops and exhibitions is the primary approach to recruiting content into the institutional repository. As participant LC2 described *"We organized a workshop and exhibition to educate and promote the institutional repository. The workshop received positive responses from faculty members. A total of fifteen workshop sessions with about 230 participants last year. Though the number may seem small, we are pleased with the effort and impact of the workshops"*

Promotional Activities

Overall, the study found that promoting the institutional repository through various channels such as email announcements, online exhibitions, faculty websites, brochures, social media, and digital boards is an effective recruitment initiative for acquiring content into the repository.

Institution A has engaged in various promotional activities to populate their institutional repository, including making email announcements to the campus community and organizing online exhibitions. LA1 explained that they send emails to the entire campus community highlighting the most popular articles, and they also promote the repository through an online exhibition.

Institution B has employed various initiatives to populate their repository, including utilizing the faculty website to search for published works by faculty members and disseminating brochures to faculty members and library-sponsored events. LB1 explained that they search for books and conferences written by staff through the institution's database, faculty websites, databases, publishers, and library collections. They also distribute brochures and advertise on the library website to promote the repository.

Institution C has also engaged in promotional activities to promote their repository, including advertising on the library website, social media, and the library digital board. LC1 explained that they promote through the library website and social media platforms, such as Facebook and YouTube, by uploading videos about the institutional repository. They also promote the repository through the Library Digital Board, which is available at each level of the library.

Setting up Content Deposit as Quality Objective

KPIs, or Key Performance Indicators, are metrics used to measure performance over time in relation to a specific objective. They provide teams with goals to strive for, benchmarks to measure progress against, and insights that motivate everyone in the organization to make better decisions. Each staff member responsible for adding content to the repository

has been assigned KPIs by the head unit. Participant LA1 provided more details about KPIs, saying *"For example, for the student repository, the target is one thousand records."* LA1 also added, *"For my KPI, I set a target of three hundred records."*

Furthermore, establishing a target is crucial for ensuring project success. In the specific context of content recruitment for the repository, Institution B has set a key performance indicator (KPI) of 6800 records to be deposited. LB1 explained, *"Our annual target is to reach six thousand eight hundred records, encompassing all types of content."*

The establishment of KPIs among staff members responsible for depositing content into the repository aims to promote the open access strategy while also increasing the number of contents deposited. Institution C employs the Key Amal Indicator (KAI) to serve a similar purpose. The KAI set for content recruitment in the Institution C repository is:

LC2: *"The KAI is the Key Amal Indicator, and its target is to deposit records into the IR records to support the initiative of university digital content development."*

LC2: *"Initially, the target was set at 3000 records per year. Later, it was increased to 6000 records, and the target is raised annually."*

DISCUSSION

The study found that a multi-pronged approach to content recruitment was used to populate institutional repositories. The three participating institutions used different strategies, which could be grouped into four themes: mediated deposit, self-archiving, promotional activities, and setting content as a quality objective. This finding is in line with the results of a review study by Mark and Shearer (2006), which identified six main recruitment strategies used in institutional repositories: conducting general promotional activities, providing mediated deposit services, harvesting content, using researcher bibliographies, tracking usage information, and implementing self-archiving policies. The use of these acquisition strategies has been shown to be effective in adding content to institutional repositories such as for existing records in the library collection.

To begin with, the three institutions shared a common strategy of using mediated deposit techniques to acquire content for their repositories. Mediated depositing involved the following sub-strategies: (a) extracting content from various publication platforms; (b) populating the repository with content from existing library collections; and c) offering deposit services. While this approach has been found to be effective, Adam and Kiran (2021) argue that relying solely on mediated submission is not sustainable for long-term content recruitment in institutional repositories.

The three institutions utilized a variety of platforms to extract content, including Scopus, Web of Science, subscribed databases, the institution's database, and a list of yearly publications. This finding is consistent with the results of a study by Lam and Chan (2007) which found that an institution in their study used electronic databases and open access sources, such as Web of Science and DOAJ, to identify faculty research publications as a means of populating their repository.

The three institutions used various depositing services to recruit content into the repository. Case study A requested authors to deposit their publications and organized slots during library client days, while Case Study B involved a two-way process of authors notifying the library via email and the library sending reminders to lecturers to upload their

publications. In Case Study C, the depositing service included searching for faculty publications on their personal websites and curriculum vitae. The importance of searching for publications on faculty and department websites was also highlighted in the research conducted by Lam and Chan (2007) and Mackie (2004). These findings emphasize the critical role of librarians in ensuring that the repository is populated with research work from the faculty and campus community. In fact, individual faculty members were contacted and asked for their complete publication lists as well as full-text materials in the study by Lam and Chan (2007), while Mackie (2004) initially appointed distinguished academics to the DAEDALUS Project Board and established contacts with several faculty members at the university who were interested in open access.

In terms of self-archiving strategies, all three case studies employed a similar approach i.e. educating depositors about institutional repository. However, only institution A went a step further by organizing training sessions for faculty members and postgraduate students. This finding is consistent with the results of a case study conducted by Abrizah (2010), which emphasized the importance of providing training to authors on institutional repositories. Librarians must actively seek to collaborate with authors of intellectual works who will be contributing to the repositories by providing user training services. The academic community should be instructed on how to use institutional repository software for self-archiving. Similarly, Ezema (2013) found that encouraging staff to deposit content into the repository is one of the major techniques used to recruit content. Genoni (2004) emphasized that "acquisitions" in institutional repositories involve marketing the benefits of contributing and training depositors on when and how to do so. This was conducted during the "educating phase" in the three case studies. Additionally, Jetkins, Breakstone, Hixson (2005) highlighted the challenges of content self-submission, which requires a commitment to invest in learning a new method, familiarity with new terminology, and an understanding of copyright issues. These challenges are substantial obstacles for staff and students and have impeded the addition of information to institutional repositories.

The three case studies also employed general promotional activities to recruit content for their repositories. The study identified five different promotional activities used by the institutions. In Case Study A, the librarians sent email announcements to the campus community and organized an online exhibition. In Case Study B, they conducted extensive content searches on faculty websites and disseminated brochures. Lastly, in Case Study C, they promoted the repository on the library website, social media, and digital boards. These findings were consistent with the remarks of Mark and Shearer (2006) that general promotional activities included passing out brochures, conducting presentations to faculty committees, publishing articles in the library or campus newsletters/newspapers, and formally launching the repository. Shook (2018) emphasizes that a crucial aspect of establishing a successful and sustainable institutional repository is consistently promoting the benefits of institutional repositories and open access publishing whenever possible.

Finally, this study found that all three institutions set up content quality objectives and key performance indicators (KPIs) to ensure consistent growth of repository content. This is a new and important finding, as it demonstrates that institutions are actively monitoring and managing the quality of content in their repositories on an ongoing basis. Successful content recruitment into institutional repositories is indeed a challenging task, as noted in previous research (Lam and Chan 2007), and is crucial for realizing the potential of a global network among institutional repositories. It is clear that librarians play a critical role in ensuring that institutional repositories are populated with high-quality research output from their faculty and campus community. This can be achieved through a combination of

mediated deposit strategies, self-archiving education and training, promotional activities, and setting up content quality objectives and KPIs. Figure 1 is a crucial representation of the recruitment strategies used to develop the institutional repository's content. By implementing these strategies, institutions can effectively showcase their research output to a wider audience and contribute to the growth and development of a global network of institutional repositories.

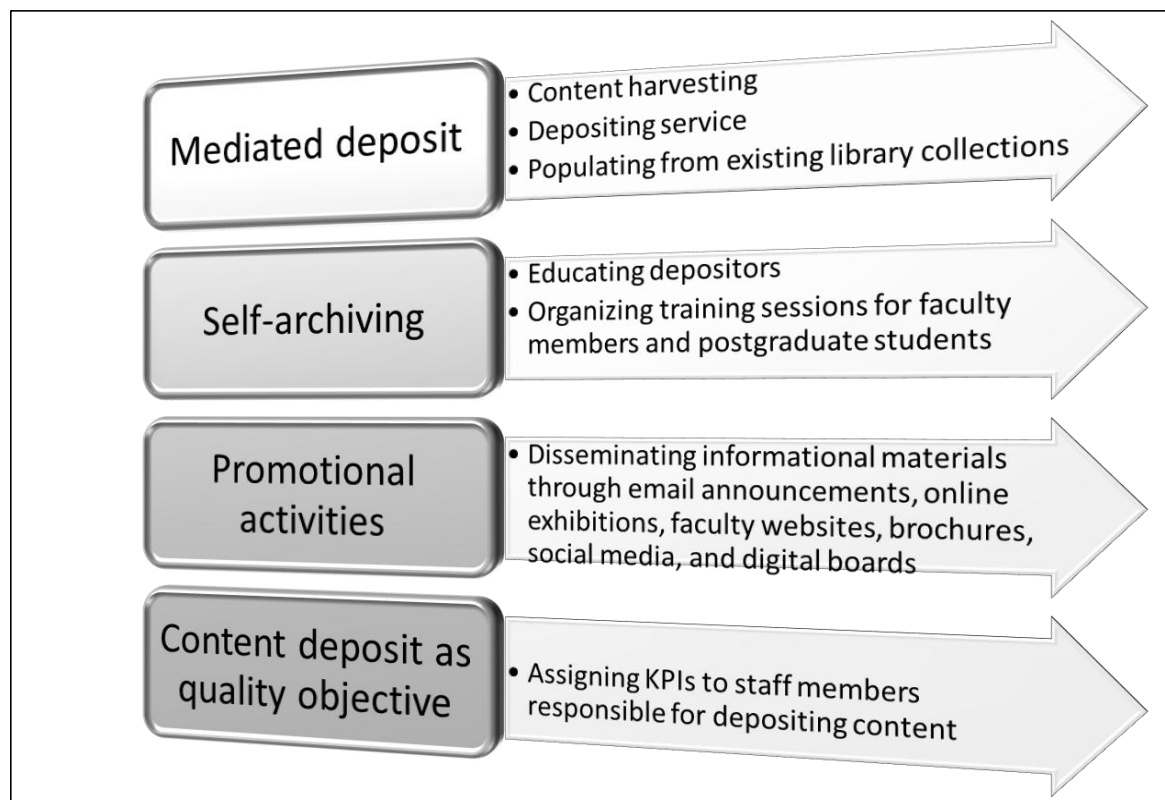


Figure 1: Content Recruitment Strategies for Populating Institutional Repositories at the Three Institutions

CONCLUSIONS

This research has identified the various strategies employed by academic institutions in Malaysia to acquire content for their institutional repositories. These findings make a valuable contribution to the literature, offering accurate and relevant data on the methods used to populate institutional repositories in Malaysia. They also inform librarians on how to maintain and expand the content of their repositories, thereby addressing the challenges faced by academic institutions in Malaysia in terms of content recruitment. However, despite the potential for mandatory policies and guidelines to serve as highly effective and sustainable content recruitment strategies, none of the three institutions studied in this research have implemented such policies. While some policies encourage depositing research publications in the university institutional repository, none of them make it a requirement. A well-populated institutional repository serves as a testament to the dedication and expertise of the library staff, while also showcasing the research, creativity, and efforts of the authors. Despite the potential to function as a valuable recruitment and marketing tool for the institution none of the three institutions studied in

this research develop researcher bibliographies on their repository platforms as an alternative access point. As a result, the success of mandatory policies and researcher bibliographies in promoting the deposit of research outputs is limited.

It should be noted that the sample size of this study was limited, and future research should include multiple respondents, including support staff, from public and private universities to validate the study's conclusions. Furthermore, a similar study using quantitative research methods should be undertaken in multiple settings to confirm the results. Moreover, additional research should investigate whether private institutions employ any other tactics that might be linked to improved strategies for populating content into institutional repositories in the Malaysian setting. Finally, further study can test a particular model that can prove to be sustainable and manageable, providing a promising solution to the challenges of content recruitment in institutional repositories.

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AUTHORS DECLARATION

The authors declare no conflicts of interest regarding the publication of this paper.

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Open-ended interview questions

General strategies:

1. What strategies are employed to promote and populate the institutional repository?
2. Do you have a mandate or policy in place that requires or encourages populating the institutional repository with research and scholarly content?"

Promotion:

3. What are the various promotional activities used to promote the institutional repository?
4. What has been the response to these promotional activities?

Depositing service:

5. Can you describe how the depositing service operates?
6. What is the scope of the service offered by the depositing service?
7. Are there any policies in place for the depositing service, and if so, can you elaborate on them?
8. What has been the response to the depositing service?

Description of the resources (such as theses and journals articles):

9. Can you explain how the activity of describing the deposited resources operates?
10. What are the processes involved, and who is responsible for performing this task?
11. What has been the response to this activity?

Researchers' bibliographies:

12. How does the activity of creating researchers' bibliographies operate?
13. What are the processes involved, and who is responsible for performing this task?
14. What has been the response to this activity?