The Journal of Bibliophilia *for Library and Information Studies / V:02 /N:07 2020. P.P 224-241*
ISSN:2661-7781

Digital Assets implementations in institutional repository In Gulf Universities

تطبيقات الأصول الرقمية في المستودعات المؤسسية في جامعات الخليج

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Recieved: 05/08/2020	Revised : 12/08/2020	Published : 30/09/2020

Abstract

The study dealt with the Digital Assets implementations in academic institutions repository in the GCC countries. The study analyses the most important applications and their contribution to the dissemination and knowledge exchange and scientific research outputs among the faculty members, researchers, and students in the Gulf region. Also, the study includes analyzing the strategies of digital repositories in publishing the scientific and academic studies and the availability of intellectual property in digital repositories as a component of Arabic digital content. The study has focused on the available modern tools in digital institutional repositories for the management of digital content, tools for organizing the content, as well as how to build and manage the digital content in the institutional repositories in the Gulf Universities.

The study used descriptive analysis, survey, case study, and statistical method, to determine the impact of institutional repositories on providing up-to-date information to researchers and faculty, as well as to explore and analyze available research tools on the Internet.

One of the most important findings of this study was that many Gulf universities still need to create institutional digital repositories on the Internet, to serve the educational and research process, and the study found that the available digital assets in institutional repositories in Gulf universities differ in type, but 80% of this digital content was dissertations,

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thesis and published articles in high-impact journals by faculty members, and there is a real use of digital assets but there is only twelve institutional repositories allow public users for free access to its assets, while the rest of the repositories require conditions and rights to access and use these assets.
Keywords: *Institutional repository- Internet- Digital Assets- Gulf University- free access- Scientific Research Tools.*

ملخص

تناولت الدراسة التطبيقات الحديثة لصناعة المحتوى الرقمي في المستودعات الرقمية بالمؤسسات الأكاديمية بدول مجلس التعاون الخليجي بالدراسة والتحليل لأهم هذه التطبيقات ومدى إسهامها بشكل إيجابي في الارتقاء بنشر وتبادل المعرفة ومخرجات البحث العلمي بين أعضاء هيئة التدريس والباحثين والطلاب بدول الخليج، مع دراسة وتحليل استراتيجيات المستودعات المؤسساتية الرقمية في نشر نتائج الدراسات والأبحاث العلمية والأكاديمية ومدي توفر الملكية الفكرية بالمستودعات الرقمية كأحد مكونات المحتوى الرقمي العربي في الإنترنت، وقد ركزت الدراسة على الأدوات الحديثة المتوفرة بالمستودعات الرقمية لإدارة المحتوى الرقمي، وأدوات ووسائل تنظيم المحتوى، فضلاً عن كيفية بناء وإدارة المحتوى الرقمي بالمستودعات الرقمية بدول الخليج.

وقد استخدمت الدراسة المنهج الوصفي التحليلي ، والمنهج المسحي ودراسة الحالة والمنهج الإحصائي، لمعرفة مدى تأثير المستودعات المؤسساتية على توفير المعلومات الحديثة للباحثين وأعضاء هيئة التدريس، فضلاً على استكشاف وتحليل أدوات البحث العلمي المتاحة على شبكة الإنترنت.

وكانت من أهم النتائج التي توصلت إليها الدراسة أنه لا تزال العديد من الجامعات الخليجية بحاجة إلى إنشاء مستودعات رقمية مؤسسية على الإنترنت لخدمة العملية التعليمية والبحثية، وقد وجدت الدراسة أن الأصول الرقمية في المستودعات الرقمية في الجامعات الخليجية تختلف من حيث النوع، إلا أن 80% من المحتوى الرقمي كان الأطروحات والمقالات المنشورة في المجلات عالية التأثير من أعضاء هيئة التدريس في الجامعة، كما يوجد استخداماً حقيقياً للمحتوى الرقمي غير أنه لا يسمح إلا 11 مستودع مؤسسي للمستخدمين العموميين بالوصول الحر إلى محتوياته، في حين أن بقية المستودعات تتطلب شروطاً وحقوقاً للوصول والاستخدام.

الكلمات المفتاحية: أدوات البحث العلمي- المستودعات الرقمية- الإنترنت- الباحثين-، الجامعات الخليجية- الإتاحة الحرة.

1. Introduction

The ICT revolution at the end of the 20th and early 21st century has created a tremendous capacity in the digital content industry and building a knowledge society, with many academic institutions in the Gulf region developing digital content that published on the internet. Modern applications have been used to make digital content through the creation of digital institutional repositories, which are considered to be a component of the content industry. Recent applications of the digital content industry have been used through the creation of digital institutional repositories, which are considered to be a component of the content industry. And many studies indicate that the decline in the percentage of digital Arabic content is due to factors, such as the lack of clear policies and the future vision of the Arab Digital Content industry, as well as the weakness of the infrastructure needed to create and manage the content industry. UN agencies, such as UN-ESCWA, have warned Arab countries of the danger of not keeping pace with the issue of digital Arabic content, as in other developed countries, and called for rapid co-ordination and cooperation to create an Arab digital content industry (Arab digital content industry. Walid Aref, 2011).

Several new applications have emerged for the digital content industry in the institutional repositories. The Internet has provided many ways to help the user to present attractive and relevant content to the users. The Internet has provided different format for the digital content including video, audio files, images, digital books, and digital journals. Therefore, the digital content industry and management required platforms and software with highly efficient to organize and classify the digital content as well as to control it in the processes of storage, retrieval and exchange of that content. The digital institutional repositories work to achieve these objectives. It works to organize digital collections and scientific research productivity and maintain it by storing, processing, sharing and providing to the big number of researchers and access to it easily and freely.

Digital repositories provide modern tools and ways for the academic institutions members Faculty, researchers and students in publishing and making available their scientific and research production to the end users from outside their institutions. It can be said that digital institutional repositories are one of the modern Internet technologies that have provided unprecedented opportunities for free access to information. It has become an effective means of scientific and knowledge exchange between academic and research institutions, IDR providing excellent opportunities for the scientific and research community in developing countries to publish their research and share Science Experiments on the Internet for the purpose of

access and benefit from it anywhere in the world. The academic institutions in the Gulf Universities are among the first to establish institutional digital repositories in the Arab world. Digital institutional repositories used Metadata standards to enable researchers and users to access to the relevant information in the shortest possible time. The digital institutional repositories of the Gulf universities have attracted the intellectual production of the affiliated researchers in all fields. According to the planned coverage of the repository for all academic programs of each university, and to make this intellectual production of the users within the institution for some universities or outside, according to the policy determined by the management of these repositories.

2. Study Problem

Most academic institutions in the Arab world have disregarded to provide an information system to enable the intellectual and scientific productivity on the Internet, which has made this scientific production locked in shelves and stores and this approach did not lead to the implementation of studies and research output for professors, students and researchers in those institutions. Institutional Digital repositories are more used in the twenty-first century to access and present the outputs of scientific research. This is because these repositories provide the storage, classification, processing, retrieval and exchange of these digital collections and make them available in full text to be used in different fields of knowledge. The institutional digital repositories have recently attracted attention from the administration of universities and academic institutions, in view of their contribution to the dissemination of the scientific and research results and its availability through the Internet or local area networks of these institutions to benefit from the development of scientific research outputs and the application of results to serve development. Hence the problem of the current study, which the researchers put in a major question which is: What are the opportunities and challenges facing the institutional digital repositories in academic institutions in the GCC countries and make them a tool for scientific research in the global information network? And several questions have been raised as follows:

- What are the directions of institutional digital repositories in bridging the digital divide to build a knowledge society in the GCC countries?
- What is the role of institutional digital repositories for scientific and technological contribution in digital publishing in the GCC countries?

- What are the strategies of institutional digital repositories in publishing the results of studies and scientific and academic research to support the development plans in the GCC countries?
- What are the digital content management tools and systems in digital repositories in the Gulf Universities?
- What are the systems and tools means of organizing digital content in institutional digital repositories in the Gulf Universities?
- What is the extent of the availability of intellectual property in institutional digital repositories as one of the Arabic digital content components?
- How to build and Manage Digital Content in institutional Digital repositories in the Gulf Universities?

3. Study objectives

The study aims at the following:

1. To know the trends of institutional digital repositories in bridging the digital divide to build a knowledge society in the GCC countries.
2. To know the role of digital repositories for scientific and technological contribution in digital publishing in the GCC countries.
3. To know the strategies of institutional digital repositories in publishing the results of studies and scientific researches to support development plans in the GCC countries.
4. To know the digital assets management tools and systems in institutional digital repositories in the Gulf Universities.
5. To study and analysis of available digital assets in institutional digital repositories in the Arab world and its influence by the data of the Fourth Industrial Revolution.

4. Study Methodology

The descriptive analytical methodology based on in-depth research of institutional digital repositories in GCC universities was used through their websites to achieve the objectives of the study based on the real problem and its different dimensions. Through the analysis and study of the trends of these repositories and their role for scientific and technological contribution and their impact on the data of the industrial revolution in order to reach the necessary solutions and results. The researchers also took advantage of this approach to identify the relations between studies and published research on institutional digital repositories Study Society.

Study society consists of the institutional digital repositories in the GCC universities, which were enumerated in (23) institutional digital repositories spread throughout the GCC universities in the Gulf Universities.

Literature review

The world has been witnessing a series of intellectual and economic transformations, particularly in the beginning of 21st Century, and the transition towards the so-called "information society" and "knowledge economy", the principle of focusing on information and technology has become a key factor in the current economy, and digital assets has become open access resources and one of the most important pillars of development and economic progress. Hence the call for the development of scientific communication methods among researchers through access to scientific intellectual production and its release from those restrictions free of charge and with a minimum of legal restrictions. This academic and research productivity is made available to the users both inside and outside the institution, in accordance with the policy approved by the Global OpenDOAR Digital Repository Guide. (Iman Omer, 2011).

The continued increase in the scientific journals prices, which have become the reservation of major publishing and institutions, the purchasing for research and Academic libraries to subscribe and access to these high impact factor journals became challenging and incapability for many libraries, "We wanted to change our view of the role of libraries and take advantage of all the possibilities in information field, but we cannot ignore the fact that globalization, although it promises an open future for communication, sometimes restricts the content and puts information at the disposal of some people without others, which sometimes hinders the development that library work can sometimes reach" Littner said at the Digital Age Library Challenges Conference (Expo Sharjah).

Academic libraries has led to the emergence of the movement of free access and to advocacy of information as one of the methods of scientific communication between Researchers through access to intellectual production, free from those restrictions without financial compensation and with a minimum of legal restrictions, in order to alleviate the burden of lack of access to knowledge, especially in the fields of science and animation.

Open institutional digital repositories provide free access to articles, research and other forms of intellectual production for the members of Saudi academic institutions, There are many successful projects for open digital repositories that have contributed greatly to the building of the knowledge society, for example the OpenDOAR project, which is part of the Sherpa Project and the British Library, the project primarily focuses on articles that have been accepted for publication, the project enables academic institutions in Britain that do not have institutional repository, as well as the researchers

who are not affiliated with a particular institution.(University of Leicester Library, 2019).

The British Library, in collaboration with a group of cultural and historical organizations is also experimenting with a shared digital repository service for open-source research output. This repository aims to increase the visibility and impact of research outputs on the Internet, allowing researchers to explore the information and knowledge generated by cultural institutions and using them in conducting the new research. (British Library, 2019). Another example has appeared from the University of Southampton research repository "ePrints Soton". It contains digital copies of research, whether in the form of periodical articles, book chapters, conference papers, thesis and other types of research publications, including multimedia. It may also include unpublished papers and manuscripts. This provides full text for many of these articles for free access.

Another experience from Connecting Africa is the first initiative to provide free access to African research in the Netherlands or elsewhere, funded by the Surf Foundation and the Developing Policy Review Network (DRRN) and supported by the Society for African Studies, Hosted by the African Studies Centre (ASC), which provides technical support and maintenance through the staff of the Library, Information and Documentation Department, which also evaluates and selects digital sources. This project provides the following services providing details of experts and researchers. African academics to facilitate tracking of ideas, conducting discussions and stimulating professional interaction, providing details of the most important developments, making the titles of published research in Africa and elsewhere available, as well as the full text of African publications, audio and image files from 55 repositories by collecting Metadata through the Open Archive Initiative protocol (Connecting Africa, 2019).

The condition of digital repositories in the Gulf universities is different, because of the availability of projects funding in these countries, in few past years, the academic libraries in the Gulf Universities, have experienced a major development and transformation. In the meantime, many academic libraries in other countries are facing mainly restrictions and difficulties in the development of their collections, because of the constant increase in subscribing of scientific journals with high impact factor. This has led to the appearance of the free access to information and Digital institutional repositories in many universities and its advocacy, and academic libraries become a fundamental pillar of education, culture, training and scientific research. As one of the methods of scientific communication between researchers through access to scientific intellectual production, institutional

repositories is a part of this information revolution, which supports free access to scientific production and freedom from the restrictions of publishing free of charge and with a minimum of copyright law, to improve the lack of access to knowledge, especially in the scientific fields to existence and integration of this mechanism along with publishing free access journals (Iman Omar, 2015).

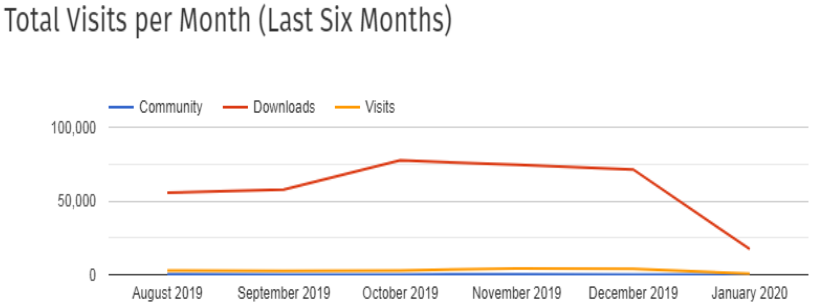
5. Indicators for Analyzing Institutional repository in Gulf Universities

The digital repositories of digital assets are truly the libraries of the future in the world to move to electronic publishing and digital assets, as electronic resources are an effective tool for all scientific institutions, whether universities, academic institutes or high schools. Therefore, all repository managers, information specialist and librarians in the academic libraries and information centers seek to improve and use it in the implementations of new technologies and communication systems and apply them effectively in libraries and information centers (Lynch, C. A. 2003).

The software in institutional repositories is divided into two types, Open Software Source, and Proprietary software, and there are seven of the Arab Gulf Universities used the open-source repository Dspace software. Four institutional repositories that are unnamed software. Only KFUPM using EPrints, King Abdullah University of Science and Technology, Open Repository and King Abdulaziz University used MARZ.

Through the study and analysis of digital assets in the institutional digital repositories in this study, it's clear that institutional repositories in gulf universities placed Strategies in publishing the research output to support development plans in the GCC. The economic agreement and the comprehensive development strategy of the GCC countries have given special importance to building a scientific, technical database, and specified that the states member develop appropriate policies and mechanisms to achieve compatibility between the research output, and the needs of Work and economic development.

On the other hand, article no 16 of the Agreement highlights the need to link between the outputs of higher education to the labor market, the uses of scientific databases including institutional digital repositories are high with required level chart below shows us the use of KASUST repository,



	August 2019	September 2019	October 2019	November 2019	December 2019	January 2020
Community	142	96	104	176	75	32
Downloads	55556	57724	77562	74442	71278	17445
Visits	2791	2556	2861	4147	3898	708

***Source:* https://repository.kaust.edu.sa/displaygastats?handle=10754/324602**

From the above chart note that the total assets actually used within 6 months for KAUST repository is 361634 downloaded publications, from the repository assets including 1353 Thesis and dissertations, 12946 published articles, 2701 Conference papers, 286 book chapters, 686 Educational entities, and981 university publications.(KAUST, 2020)

According to directory of Open Access Repositories (DOAR), there are 17 institutional repositories open in the Gulf Universities as of January 2020 from all Gulf countries. The largest number of institutional repositories in Saudi Arabia was 12 repositories followed by the United Arab Emirates 3 repositories, Kuwait 1 repository, and Qatar 1 repository, there are other repositories in Iraq, Oman and Bahrain, but they are not registered in the directory of Open Access Repositories as shown in the table below:

Institution & Repository Name	Country	Software	IR URL
Institutional Digital Repository for Naif Arab University for Security Sciences	Saudi Arabia	**DSpace**	https://repository.nauss.edu.sa/
KAUST Digital Archive King Abdullah University of Science and Technology	Saudi Arabia	Open Repository	http://archive.kaust.edu.sa/
KFUPM EPrints	Saudi Arabia	EPrints	http://eprints.kfupm.edu.sa/
King Saud University Repository	Saudi Arabia	DSpace	http://repository.ksu.edu.sa/jspui/
Knowledge	Saudi Arabia	Unspecified	http://marifah.org/
Najran University's Repository	Saudi Arabia	DSpace	http://repository.nu.edu.sa/
Taibah University Digital Repository	Saudi Arabia	DSpace	http://repository.taibahu.edu.sa/
The Digital repository of Information Science Department King Abdulaziz University	Saudi Arabia	MARZ	http://libraries.kau.edu.sa/Pages-المستودع-الرقمي.aspx
Umm Al-Qura University Reference Repository	Saudi Arabia	Unspecified	http://eref.uqu.edu.sa/
المخطوطات(Makhtota) King Saud University	Saudi Arabia	Unspecified	http://makhtota.ksu.edu.sa/
Corepaedia University of Dubai	UAE	DSpace	http://uod.corepaedia.4science.it/
QSpace Qatar University	Qatar	DSpace	http://qspace.qu.edu.qa/
University of Babylon Repository	Iraq	Unspecified	http://repository.uobabylon.edu.iq/
AUK Repository American University of Kuwait	Kuwait	DSpace	https://dspace.auk.edu.kw/
Not registered			
IAU Institutional Repository Imam Abdulrahman bin Faisal University	Saudi Arabia	DSpace	http://repository.iau.edu.sa/
PMU Research Repository Prince Mohammad Bin Fahd University	Saudi Arabia	DSpace	http://research.pmu.edu.sa:8080/jspui/mydspace
BSpace Digital Repository British University in Dubai	UAE	DSpace	https://bspace.buid.ac.ae/
Scholarworks@UAEU United Arab Emirates University	UAE	Unspecified	https://scholarworks.uaeu.ac.ae/
KUSTAR Repository Khalifa University	UAE	DSpace	http://libguides.kustar.ac.ae/repository
DSpace at AUS American University of Sharjah	UAE	DSpace	https://dspace.aus.edu:8443/xmlui/
BSpace Repository University of Bahrain	Bahrain	DSpace	http://bspace.uob.edu.bh/xmlui/
AUIS E-repository American University of Iraq	Iraq	EPrints	http://eprints.auis.edu.krd

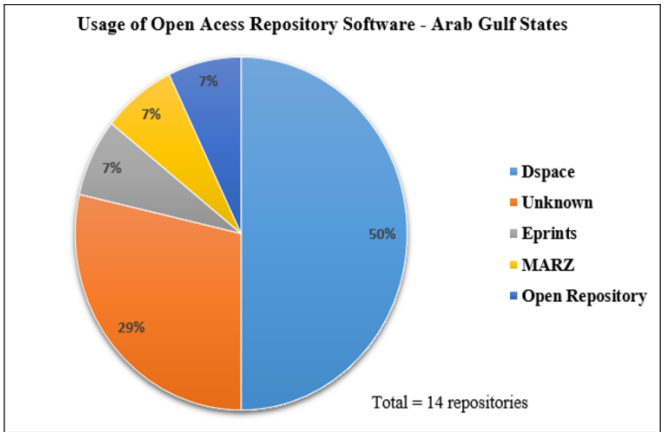
Repositories in Arab Gulf Universities

Institutional Digital repositories required automated systems to manage its assets and to support the processing for providing the possibilities of depositing, managing and preserving the digital assets in the institutional repository, in addition to providing a number of services such as deposit, search and retrieval of digital assets, the asset management system in

institutional repository consists of Four elements (Barton and Waters 2005, 66):

- Interface to add the digital assets to the repository system.
- Interface for searching, browsing and retrieving the digital assets.
- Content storage database.
- Administrative interface to support Asset management and conservation activities.

DSpace software is an open source software for Digital Object management, it is used to store any type of digital materials, DSpace software used in the largest institutional repositories in gulf such as King Saud University institutional repository, Dspace selected by universities as open-source digital asset management applications due to ease of use by librarians and repositories managers, in addition to supporting the principle of The Open Archives Initiative Protocol for Metadata Harvesting (OAI-PMH, 2019), which gives external search engines access to repository assets (Fahad Al-Dawehi, 2014, 137).



Source: OpenDOAR (2018).

From the above figure, It showed the DSpace software is the most open source use in institutional repositories in Gulf Universities (50%) followed by EPrints software (7%), MARZ software 7% and open Repository software 7%. Some institutional digital repositories (29%) use their own software package (internal software).

The researchers in this study analyzed the institutional digital repositories in the Gulf Universities in accordance with a set of criteria and items, including to operations, accessing, Compatibility, Security, privacy, Support for open standards, Metadata, Content editing, Internal Accessibility, Content Lifecycle, Browsing, Preserve and storage. The study showed that

the following features are available in the institutional repositories of the Gulf Universities:

1. Deposit and retrieval service: all institutional repositories support personal deposits and deletion of digital entities.
2. The repository managers control the availability and deposit rights to restrict access to information.
3. Administrative services for asset management programs are available and support many administrative functions such as workflow design, review of submitted articles before or after publication and Metadata review.
4. Metadata service availability: most institutional repositories offer the creation of Metadata and make it available to the search engines either inside the repositories or Harvesters.
5. Institutional digital repositories in the Gulf Universities support users through search and browse interface.
6. Storage space: institutional repositories in the Gulf Universities is secure the digital content management by providing services such as backup, allowed files and Fyffe, checking false data and protecting against modification or deletion of digital assets.
7. Institutional repositories in the Gulf Universities promote file naming service.
8. Most institutional repositories in the Gulf Universities support search engines in campus access and proxy access.

Digital assets in the institutional repository is the objects of the repository project, this asset differs in its materials, types and forms, in order to be useful for building the knowledge society, it must include the appropriate tools for management and organize these assets in an effective manner, as well as collect and index them to facilitate the repository search process then add metadata, review it and adjusted metadata criteria that allow search engines to access to the repository assets. (Fahad Al-Dawehi, 2014, 70).

The digital asset in institutional repositories in the Gulf Universities consists of resources in specific educational fields, published and unpublished scientific research for faculty members, thesis and dissertations, E-Books, conference proceedings, and reference collections, all these assets have been contributed by university faculty members, researchers, and students. After depositing these digital materials in institutional repositories, the repository managers will review the contents, and add metadata to ensure that these assets suitable for preservation in the digital institutional repository. The researchers reviewed in this study the content of 17 institutional digital repositories in Gulf Universities, and

analysis of implementations that have been used to managed for assets in those institutional repositories. From the table below the study, it is discovered that there are four institutional repositories their digital assets only one type which is PMU Research Repository, BSpace Digital Repository British University in Dubai, Scholarworks@UAEU United Arab Emirates University, and DSpace at AUS American University of Sharjah, by searching at the contents only the published papers for faculty members were found. The contents types of digital entities that have been deposited in institutional repositories in the Gulf Universities are in below table, the researchers focused on institutional repositories documented in the global directory of Open Access repositories (DOAR):

Repository Name	Type of contents						
	Thesis and Dissertations	Published Articles	Conference presentations	Books chapter	Educational entities	University publications	Others
Institutional Digital Repository for Naif Arab University for Security Sciences	4780	5740	-	-	14	164	-
KAUST Digital Archive King Abdullah University of Science and Technology	1353	12946	2701	246	686	981	976
KFUPM EPrints	3333	1992	473	8	25	57	32
Najran University's Repository	-	770	-	-	615	41	10
The Digital repository of Information Science Department King Abdulaziz University	33	198	-	-	-	-	-
Umm Al-Qura University Reference Repository	700	160	900	-	-	-	-
(Makhtota) King Saud University		-	-	-	-	-	11000
Corepaedia University of Abu Dhabi	-	201	51	-	56	282	56
Corepaedia University of Dubai	-	183	1	-	-	267	324
University of Babylon Repository	2385	100	-	-	-	-	-
AUK Repository American University of Kuwait	24	270	304	64	-	4	-
PMU Research Repository Prince Mohammad Bin Fahd University	-	858	6	-	-	-	-
BSpace Digital Repository British University in Dubai	-	3483	-	-	-	-	-
Scholarworks@UAEU United Arab Emirates University	-	1097	-	-	-	-	-
DSpace at AUS American University of Sharjah	-	-	-	-	-	-	-
BSpace Repository University of Bahrain	327	2758	-	-	-	-	-

From the above table there are seven institutional digital repositories where their content are not available or not accessible and they are (QSpace Qatar University, King Saud University Repository, Taibah University Digital Repository, KUSTAR Repository Khalifa University, Taif University Digital Repository, Umm Al-Qura University Reference Repository and Institutional Repository of Imam Abdulrahman bin Faisal University), the links of these institutional repositories not reachable to the public users except QSpace repository because of Internet Protocol problems (IP). In the following the researcher analyzed the best practices for digital assets implementations in institutional digital repositories in the Gulf Universities:

- The manuscript system at King Saud University is an important example for digital assets implementations in institutional repositories, which contains more than 11,000 manuscripts open access to the Faculty members, researchers, students, and visitors, users can browse and read the manuscripts from the KSU University website and retrieve information about Author, number of pages, etc.(king Saud University, 2013)
- Archiving system of thesis and dissertations in the Central Library of Babylon University, user access to the thousands of digital thesis and dissertations deposited by the faculty members, browse the electronic forms and retrieved the bibliographic information, this system also generates access links that allow the borrowing of the thesis or the withdrawal of a photocopy of the dissertations or thesis. Allowing open access for digital assets to the researchers and to the academic community for free of charge and with the approval of publishers, to increase the access rate (Digital Reach) and viewing (Scholarly Visibility) of the university research output. (UOB thesis index, 2013)
- Institutional Digital repository in department of information Science at King Abdulaziz University using MARZ in-house software for a digital asset management created and designed by the KAU Portal Applications with Department of IT and is used to manage the university's website as well as faculty websites. This repository provides free access to intellectual production in the field of information science at King Abdulaziz University, the digital assets including 33 thesis and dissertations, and 198 published articles by KAU faculty members, this assets is available for free access to the public and the users can, browse, read and download. (KAU Portal, 2020)
- The digital archives and open access resources at the American University of Kuwait. This repository using DSpace collects, preserves, and distributes the digital assets. The repository contents including 24 thesis and dissertations, 270 published articles by the university faculty members, 304 conference proceeding, 64 books chapter, and 4 university publications, this assets are accessible the public.(AUK, 2020)
- The University of Bahrain's institutional repository (BSpace), created and designed by Dspace and aims to collect the university's scientific research production in a unified database, in addition to increasing public knowledge of scientific research and academic

activity produced by the University of Bahrain, also to enhance research exchange, knowledge disseminate, and Scientific produced by the University regionally and internationally. The digital assets in this repository is available for the university community only and the public can access to the bibliographical data and abstract only.

- The Digital Repository of Nayef University provides free access to the scientific research outputs of The Arab University of Security Sciences in various forms including 4780 thesis and dissertations licensed from different colleges, 5740 published scientific research articles from High impact factor journals, 14 book chapters, and 164 Nayef university publications. The contents of this repository provide the public users only the abstract and bibliographical data, but users can access to the full text of all assets from in campus. (NYSS, 2020)

6. Results

Although there are many institutional digital repositories in Gulf universities, which totaled to 17 repositories according to the Directory of Open access DOAR, and its efforts to link these repositories to states development goals, the study reached a number of results that linked with the study's questions that were put forward the methodology of research. Through the study and analysis, the researchers reached the availability of digital assets implementations in the institutional repositories in the Gulf universities in most of the repositories that were studied.

This promotes free access assets through without restrictions or conditions, accepts thesis and dissertations which requires intellectual property rights. There are a number of institutional repositories that the public users can not benefit from them, because the access conditions to the content require user name and password, such as the digital repository of Umal al-Qurai University, King Saud University, and Imam Abdul Rahman Bin Faisal University.

The study has found the digital assets in digital repositories in gulf universities varied in type, but 80% of content was the thesis, dissertations and published articles in high impact journals from the university's faculty members, also there is a real use of digital content as evident in the digital repository's usage statistics at King Abdullah University of Science and Technology.

7. Discussion

Many gulf universities still need to create institutional digital repositories on the Internet to serve the educational and research process, and to save the intellectual works of their researcher and faculty members.

The current of institutional repositories in which the researcher counted 23, only 11 repositories allow public users to free access to their contents, while the rest of the repositories require conditions and rights for access and use. Institutional Digital repositories are considered by a set of features that distinguish the assets from other digital materials and sources available on the web, it contains multiple types of text files, videos, photo files, educational entities, data set, and these materials can be in digital form. (Iman Omer, 2011)

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