

The Jordanian Public University Libraries Consortium Subscriptions to International Databases: Assessment and Challenges

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Abstract

Subscriptions of academic databases are key for supporting university researchers but are probably costly for university libraries. This study examines the use of international databases that Jordanian public university libraries subscribe to through a consortium library to determine the feasibility of subscribing to them and the consortium's role in rationalizing the subscription expenses. The study utilized database-issued consortium reports, statistical reports, database administrators, and a survey of 33 library managers. The results revealed that libraries accomplished their goals in rationalizing expenses by subscribing through consortium; second, participants largely agreed that there are difficulties in developing a strategy for a consistent database subscription policy.

Keywords: Database Subscription; Public University; Subscription Consortium; Administrators; Consortia.

اشتراكات اتحاد مكتبات الجامعات الحكومية الأردنية في قواعد البيانات الدولية: التقييم والتحديات

الملخص

تعتبر الاشتراكات في قواعد البيانات الأكاديمية أساسية لدعم الباحثين الجامعيين، ولكنها قد تكون مكلفة بالنسبة للمكتبات الجامعية. تبحث هذه الدراسة في استخدام قواعد البيانات الدولية التي تشترك فيها مكتبات الجامعات الحكومية الأردنية من خلال مكتبة اتحاد لتحديد جدوى الاشتراك فيها ودور الاتحاد في ترشيد نفقات الاشتراك. استخدمت الدراسة تقارير الاتحاد الصادرة عن قاعدة البيانات، والتقارير الإحصائية، ومسؤولي قواعد البيانات، واستطلاعاً شمل 33 من مديري المكتبات. أظهرت النتائج أن المكتبات قد حققت أهدافها في ترشيد النفقات بالاشتراك من خلال الاتحاد. ثانيًا، اتفق المشاركون إلى حد كبير على وجود صعوبات في تطوير استراتيجية لسياسة اشتراك قاعدة بيانات متسقة. الكلمات المفتاحية: اشتراك قاعدة البيانات، الجامعة العامة، اتحاد الاشتراكات، الإداريون، اتحادات.

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Introduction

The growth and progress of society are developed through the dynamic processes of data collection knowledge and research. The free flow of data access and development of many sectors in the industries, economy, and overall society. Research is the pinnacle of progress and success which leads to achieving many scientific goals as well as attaining material life for the common man. In Jordan, international databases when subscribed by the public university, face many problems. This arises the need of building consortiums of libraries in a better position when negotiating with vendors and producers for subscription fees. The public university libraries in Jordan established the Excellence Centre for Jordanian Public University Library Services (CoE for JOPULS) consisting of ten libraries and with every library paying an annual membership fee accordingly. However, these libraries are not maintained to provide up-to-date literature and research data for the researchers to resolve upcoming issues by making use of the accurate knowledge provided in the public libraries.

According to the agreement signed between the universities, this consortium is working. The board manages the CoE, which consists of library directors. In 2004 CoE was developed with a plan to participate and share the cost of subscriptions between libraries. The cost of subscription was shared based on the number of faculty members and the number of students and on the regularity of use by every university, which was estimated through reports approved by the database suppliers and vendors (Athamneh, 2016).

The University of Jordan in 2016, paid 29.762% for using the database of Emerald of the subscription fees of a large number of academic students and staff members. Whereas, in contrast, 15.571% was paid by the Hashemite University Library, German Jordanian University Library, and Yarmouk University Library while 15.065% was paid by the Mutah University Library and 8.620% was paid by the Al-Balqa Applied University Library. However, other university libraries such as Al-Tafileh University Library, Al Albayt University Library, Science University Library, and Al-Hussein Bin Talal University Library did not pay anything because they were not subscribing to that yearly ("Minutes of the board meeting for COE", 2016).

The study benefited from the methods and results of these previous studies and builds on them. What distinguishes this study from previous Jordanian studies on this subject was that not only did it rely on the statistical reports issued by the libraries' databases and on

statistical and financial data issued by the CoE to determine the feasibility of subscribing to the databases, but also on the viewpoints of current and former library managers, especially those who have worked in the CoE for more than three years, and on viewpoints of the database administrators in libraries. Previous foreign studies covered the same ground, but this is a new Jordanian study. Additionally, certain foreign studies did not look at the viewpoints of library managers and database administrators.

This study aimed to assess the use of international databases, which Jordanian public university libraries subscribe to the library consortium (CoE), to determine the feasibility of subscribing to these databases and to evaluate the role of the CoE in the rationalization of subscription expenses. The study attempted to answer the following questions:

- (1) How do libraries get financial benefits from subscribing through the CoE?
- (2) To what extent are faculty members using the databases?
- (3) How do libraries accomplish their goals in rationalizing expenses through their membership of the CoE from the point of view of database administrators and library managers?
- (4) What are the challenges and problems libraries face when subscribing to databases?

This study is significant in providing a roadmap for CoE member libraries when evaluating the feasibility of joining the libraries consortium to rationalize database subscription costs. It will enable Jordan's Ministry of Higher Education, universities, and Scientific Research to make informed decisions when determining a proper strategy for libraries to subscribe to these databases.

This study would substantially offer information on the state of the art for ICT infrastructural facilities in public universities of Jordan, and the utilization of degree and accessibility of electronic resources by students for their research in terms of productivity. The findings of this study would make a substantial contribution towards providing solutions to the current debate in the field of information science on the need to access and use electronic sources for perfecting the relatively low level of research in Jordanian public universities. Therefore, the study would offer the foundation for providing the solution to the issue of non-utilization of databases in Jordanian public universities even where they were available and accessible. The findings of this study will then assist in the planning for the

rapid dissemination of electronic resources and offering of databases in Jordanian public universities by university librarians, government ministries or agencies, and management.

Literature Review

The extended literature review on consortia libraries shows a particular emphasis on research on academic consortia libraries with significant coverage of case studies. For example, a review of the literature was prepared by Tammaro (2016) regarding academic library consortia in this digital realm and thus offers a comprehensive review of academic consortia development and history. The decision-makers look for the academic consortia library as a successful model for providing access to a vast majority of electronic resources at lower prices via group negotiation and agreements with publishers and vendors (Southern European Libraries Link, 2014). High discount rates for subscriptions can be achieved by the consortium in electronic resources from the most dominant publishers and databases (Baskaran and Binu, 2019; Babarinde and Onifade, 2019; Zervas and Haraki, 2017; Machimbidza and Mutula, 2020). Most electronic resource publishers reacted to the call of the consortium positively. According to Evans and Schwing (2016), the rates provided to the consortium are lower by 60-99%, relying on the institution's category. This will add stress on providers, specifically publishers of electronic resources to reduce the cost of purchasing information at the rate of increase. Thereby, the consortia library is usually established for negotiating this mutual purchase and subscriptions (Al-Baridi, 2016).

The developing countries, with the advent of the 21st century, shifted the concern towards federated digital libraries, with ordinary goals for minimizing subscription costs of electronic resources to attain better negotiation to prevent duplication (Chisita, 2017). The term consortia library has appeared to experience a growing rise in the budgets of electronic resources (Shivarama et al., 2018; Shetty, 2020). According to Ayoub, Amin, and Wani (2018), academic consortia libraries appeared in the early 1980s and became ordinary towards the end of the 1990s, when the majority of academic libraries were exploring methods for improving efficiency and resolving barriers to financial resources.

Sarairah (2016) showed that the cost of subscription of one individual library to the databases was US\$3,790,000, while the collective subscription was US\$1,840,000 and thus achieved a savings of US\$1,950,000. The total savings on databases between 2011 and 2016

amounted to US\$11,045,794. All original articles numbered 135,029 peer-reviewed published in the journal that is active from 2002 to 2012 were 204 and indexed in the Scopus® database citation was identified by Kortlever et al. (2019). They found no difference in the likelihood that an article would be cited based on whether the article appeared was published in an open-access journal or a subscription-model journal.

Zhang and Su (2018) examined the following databases: Essentials (Gale), Business Economics and Theory (Gale), ABI/INFORM Complete (ProQuest), Global (Gale), Econ Lit (EBSCO), Business source complete (EBSCO), LexisNexis Academic, and concluded that each one of the databases has its unique strength in style and content of presentation. As few are specialized in certain fields whereas few are comprehensive in coverage.

Piwowaret al.(2018) assessed the prevalence and characteristics of OA and estimated that this proportion is growing, driven particularly by growth in Gold and Hybrid and at least 28% of the scholarly literature is OA. 2015 is the most recent year analyzed and has a 45% highest percentage of OA. Furthermore, the study also observed the impact of citation on OA articles, conforming to the common advantage of citation on open access: accounting for discipline and age. 18% more citation was received by the open-access article than average, the Green and Hybrid OA effect is primarily driven by them.

It is indicated by Koppel (2015) that it was not a new idea to build library cooperation, where political and economic forces make the financial benefits of cooperating in consortia library delivery structures ever clearer. Gradually more sophisticated customers and patrons need to place new demands on libraries to deliver more and improved resources even faster than before. In addition, they attempted to provide a few times and tangible quantifiable explanations to their academic library members for the value they offer, particularly the value proposition expressed where exceeds the financial value of consortia dues membership.

The development and strategies in the area of networking, automation, consortia, resource sharing, electronic document delivery, and digital libraries have emerged new practices in the management and operations practices of the Library and Information Systems in the Arabic World.

Research Methods

Data Collection Methods

The study adopts a descriptive approach based on the statistical reports issued by the databases and the statistical data and financial reports issued by the CoE. The evaluation was based on these reports in addition to the opinions of managers and database administrators. The study population consisted of 35 library managers and assistants, and 26 database administrators, making a total of 61. Fifty people responded to an initial request for participation, and after testing the questionnaire as explained above, the final version was sent to the remaining 40. A total of 33 respondents returned these questionnaires, which makes up 54.09% of the study population. Table 1 shows the libraries and the number of responses from each library. As is shown in Table 2, most of the respondents have postgraduate degrees and more than three years of experience.

Table 1. Libraries and the number of responses from each library.

University	Responses	Percentage
Jordan	4	12.1
Al-Yarmouk	4	12.1
Mu'tah	3	9.1
Science	4	12.1
Al-Hashimiya	3	9.1
Al-Balqa	3	9.1
Al-Bayt	2	6.1
Al-Hussein	5	15.2
Al-Tafileh	3	9.1
German	1	3
Centre of Excellence	1	3

Table 2. Demographic characteristics of the sample.

Variable		Frequency	Percentage
Job title	The manager or his deputy	22	66.7
	Director or assistant director of the department	5	15.2
	Head of department, division, or branch	6	18.2
	Total	33	100.0
Qualification	Postgraduate	20	60.6
	BA degree	13	39.4
	Diploma	0	00.0
	High school	0	00.0
	Total	33	100.0
Years of	One year	3	9.1

experience	Two years	6	18.2
	Three years or more	24	72.7
	Total	33	100.0

The evaluation was based on predetermined objective levels. The data sources were the following:

- (1) Financial reports issued by the CoE to evaluate the costs and benefits.
- (2) Vendors' statistical reports to evaluate how frequently academic staff members used the databases. Students were excluded because the studying language at the university is Arabic, and most of its students cannot read English texts.
- (5) The opinions of library directors and database administrators.

This study uses a questionnaire as the main tool for collecting data. Throughout the Department of library information technology and Science, two experts in the field of librarianship have validated the tools for data collection. Face and Content validity was conducted for the objective of the instruments, proper wordings of the items, relevance of items, and clarity of the instrument. The tool validity to verify, the questionnaire was tested by presenting it to 10 people, including former library managers, database administrators, and faculty members who specialize in libraries and measurement. The questionnaire initially consisted of 19 statements, but after examination during the test phase, the final questionnaire was reduced to 15 statements covering five topics with three statements per topic.

The internal consistency of items and reliability coefficient was determined through Cronbach Alpha from the respondents. The tool stability to test, an R-Test was carried out by applying it to 10 members of the research population who were excluded from the sample by distributing them and then redistributing them after two weeks.

The five topics are:

- (1) The extent to which libraries achieve their goals and reduce expenses by sharing databases through the CoE
- (2) Challenges facing libraries when sharing databases through the CoE
- (3) Problems and challenges facing libraries relating to their universities
- (4) Problems and challenges facing libraries relating to the Ministry of Higher Education

(5) Suggestions and recommendations to solve database-sharing problems.

The researcher analyzed the data using descriptive statistics through SPSS version 25. Simple percentages, Descriptive statistics of frequency counts, and mean scores were utilized for investigating research questions through generated data.

Results

Research question 1: How do libraries benefit financially from subscribing through the CoE?

Table 3 shows the cost of the electronic subscriptions by the CoE for all universities for the years 2014-2016, providing more than 15 databases, including 12 academic databases and three for technical issues and organization in libraries. Notably, there was a significant rise in subscription fees in 2015 compared to 2014; the cause was that the CoE obtained a reduction in subscription fees. Additionally, in 2015 the vendor raised subscription fees.

Libraries pay an annual subscription fee of US\$ 42,500 to the Coe. In 2014, there was meagre financial value in the participation of libraries in the databases, as is shown in the table. If the total cost of participation was divided by the number of universities, the share of each university would be about US\$ 20,900, which does not cover 20% of the individual subscription to a single database such as EBSCO HOST, which means that there was a clear financial feasibility that can be measured for the subsequent years of participation (2015 and 2016). The value of these subscriptions is covered by the CoE's account.

In 2016, the CoE received its revenues from the membership of the 10 libraries, totalling US\$ 425,000 annually, as well as from the Jordanian Scientific Research Support Fund to the amount of US\$ 1,700,00, whereas in 2014 and 2015; it was US\$ 850,000 per year. Thus, this study found that subscription to the databases through the CoE significantly reduces the cost of obtaining research in existing databases. This signifies clear economic feasibility.

Table 3. Electronic subscription costs for the Centre of Excellence for all universities for 2014-2016.

Database		Total subscription cost by year in US\$		
		2014	2015	2016
1	INFORMATION HEALTHCARE	177,353	684,897	695,082
2	SPRINGER			
3	TAYLOR AND FRANCIS			
4	WILEY			
5	EMERALD			
6	OXFORD UNIV. PRESS			
7	EBRARY			
8	EBSCO HOST			
9	DEEP KNOWLEDGE PORTAL			
10	DEWEY WEB			
11	LC CLASSIFICATION WEB			
12	OCLC WEB CONNEXION			
13	MATHSCINET			
14	ROYAL SOCIETY OF CHEMISTRY			
15	ULRICH'S			

Research question 2: To what extent are faculty members using the databases?

Table 4 indicates the frequency of database used by faculty members, showing the total use and storage of full text for all member libraries was 477,460 searches for 2014 and 737,623 searches for 2015. Table 4 shows that the total database downloads for the two years 2014 and 2015 were:

$$477,460 + 737,623 = 1,215,083 \text{ downloads}$$

Whereas the cost of the subscription to databases for the two years 2014 and 2015 was:

$$177,353 + 684,897 = \text{US\$ } 862,250$$

Therefore, the cost of downloading one search can be calculated by dividing the total cost of the CoE subscription by the total downloads for the years 2014 and 2015, which emerges too:

$$\frac{862,250}{1,215,083} = US\$ 0,709$$

A single download was not available through the CoE subscription; however, it was available through the delivery services of the British Council Library in Amman and costs US\$1. Based on this result, the participation of libraries can be expanded nationally through the Ministry of Higher Education (MoE). Registration fees were included on the annual tax invoice and licenses for institutions, research information centers, and private universities. This would encourage scientific research.

In addition, the collective participation of libraries significantly reduces the cost of subscription fees compared to individual participation, as confirmed by Saraireh (2016). In an interview conducted with Athameneh in 2016, he indicated that when universities began to participate in international databases before the establishment of the CoE, the number of research papers published by faculty members at the universities between 1996 and 2005 was 6,827, whereas, after the establishment of the centre and coordinated participation in the databases from 2006 to 2013, the number of research papers published reached 15,926. It was clear that the number of research papers has more than doubled, which means that there was scientific feasibility in addition to economic feasibility, and there were clear indications of the use of the databases in all libraries.

Table 4. Full-text downloads and databases used.

Database name	2014	2015
SPRINGER	66,213	56,174
TAYLOR AND FRANCIS	7,920	52,471
WILEY	0	77,182
EMERALD	34,490	42,934
EBRARY	132,293	282,881
EBSCO HOST	236,544	218,309
ROYAL SOCIETY OF CHEMISTRY (RSC)	0	7,672
ULRICH'S	30,543	36,151
Total	477,460	737,623

Note: researchers could not get information about the other seven databases

Table 5 shows the extent of university participation in databases and the extent of their use by faculty members in 2014 and 2015. The table shows the use of databases by all participating universities. The most searches (410,124) are from the University of Science and Technology, followed by Yarmouk University and the University of Jordan. The higher number of faculty members and students in these universities could be the reason for the higher number of searches compared to the other universities. The Al-Bayt University recorded the least searches (7,308). The table indicates that the most commonly used database was the EBRARY database. This may be because it contains books and the full text, which does not limit their use to faculty members but also to postgraduate students.

Table 5. Full-text downloads and databases used per university library.

Database Library	EMERALD		RSC		SPRINGER		ULRICH'S		WILEY		EBRARY		EBSCO		Total
	2014	2015	2014	2015	2014	2015	2014	2015	2014	2015	2014	2015	2014	2015	
Jordan Library	19,865	22,388	-	1,915	38,780	21,200	1,517	1,475	-	22,826	35,048	28,605	94,020	81,397	369,036
Just Library	-	-	-	3,696	15,131	24,412	9,452	4,763	-	41,749	181,024	17,252	-	-	410,124
Yarmouk Library	5,654	7,967	-	385	3,897	2,688	3,785	6,348	-	2,504	11,040	10,208	57,883	47,452	159,811
Mutah Library	1,296	2,026	-	236	2,034	1,242	1,881	772	-	1,706	11,166	8,072	12,771	8,967	52,169
Albalqa Library	74	3,431	-	135	1,263	2,142	449	1,060	-	5,470	11,110	33,150	4,356	4,551	67,191
Hashemite Library	1,366	2,002	-	219	3,392	1,849	5,676	9,165	-	1,960	6,523	10,334	4,057	10,498	57,041
German Jordan University	6,235	5,098	-	644	361	1,248	420	120	-	0	7,610	1,675	2,473	3,347	20,211
Tafilia Technical Library	0	22	-	138	300	201	1,128	875	-	56	5,740	4,035	2,021	1,549	16,065
Al-Bayt Library	-	-	-	134	700	566	685	601	-	448	594	2,552	453	575	7,308
Alhussein Bin Talal	-	-	-	170	355	626	5,550	10,972	-	463	13,025	14,021	1,992	3,785	50,959
Total	34,490	42,934	-	7,672	66,213	56,174	30,543	36,151	-	77,182	282,880	129,904	180,026	162,121	

EBSCO HOST is the most commonly used database, which is a combination of different complex institutions and thus contains thousands of refereed full-text journals in many subjects and also supports the Arabic interface, which has grown and is used among students. ROYAL SOCIETY OF CHEMISTRY is the least commonly used database; this

may be because its use was limited to the ones whose interested in chemistry.

Research question 3: How do libraries accomplish their goals in rationalizing expense through their membership of the CoE from the point of view of database administrator and library manager?

Table 6 shows that libraries have achieved their goals of reducing costs by participating in databases through their membership in the CoE. Altogether, 97% of the sample agreed and 3% agreed. 87.9% of the sample agreed that they should continue to subscribe to the databases through the CoE.

Table 6. Responses to statements regarding libraries achieving their goals of reducing costs.

	Statement	I Totally Agree		I Agree		I Disagree		Total	
		n	%	n	%	n	%	n	%
1	Participation in the databases through the CoE achieved financial savings compared to individual participation	32	97.0	1	3.0	0	0	33	100
2	There are administrative feasibility and cost savings when you subscribe to databases through the CoE	329	97.0	1	3.0	0	0	33	100
3	We support the continued coordination of database sharing through the CoE	29	87.9	4	12.1	0	0	33	100

Research question 4: What are the challenges and problems libraries face when subscribing to databases?

Table7 shows that the biggest challenge facing member libraries when it comes to sharing databases through the CoE was their different budgets. This implies that some libraries may be able to subscribe to a database, but other libraries cannot because of a lack of funds. The table also indicates that there were no disagreements on databases to be shared by libraries and that there was a clear policy to calculate and share financial costs among member libraries.

Table 7. Responses to statements regarding challenges facing libraries when sharing databases through the Centre of Excellence.

	Statement	I Totally Agree		I Agree		I Disagree		Total	
		n	%	n	%	n	%	n	%
1	There is difficulty in agreeing on the databases that will be shared by member libraries	0	0	6	18.2	27	81.8	33	100

2	There is a disparity in the budgets of member libraries	18	54.5	4	12.1	11	33.4	33	100
3	Lack of a clear policy in the distribution and sharing of financial costs among member libraries	0	0	4	12.1	29	87.8	33	100

Table 8 shows the challenges faced by libraries related to their universities when participating in databases through the CoE. The annual subscriptions to databases fluctuated between the addition of new databases and the cancellations of others due to the lack of a fixed budget approved by the university. This means that 54.6% of the participants consider it a problem; therefore, it is necessary to allocate fixed amounts to participate in the databases and to increase the proportion of annual allocations of libraries to meet the increase in prices imposed by the supplier.

Table 8. Responses to statements regarding problems and challenges faced by libraries related to their universities when subscribing to databases through the Centre of Excellence.

	Statement	I Totally Agree		I Agree		I Disagree		Total	
		n	%	n	%	n	%	n	%
1	There is difficulty in establishing a clear mechanism for participation in the databases that are adopted by the presidents of universities	1	3.0	6	18.2	26	78.8	33	100
2	The library does not have guidelines that define the policy of subscribing to the databases, which causes fluctuation in annual subscriptions to the databases by adding new databases and cancelling others	1	3.0	7	21.2	25	75.8	33	100
3	The weakness of the approved budget causes fluctuation in annual subscriptions to databases between the addition of new databases and the cancellation of others	6	18.2	12	36.4	15	45.5	33	100

In Table 9, one of the challenges and problems facing libraries is the difficulty of establishing consistent policy or a strategy for participation in the databases that were adopted by higher education. Another challenge was the fluctuations in financial support for libraries set up by the ministry. The Higher Education Minister at times does not support them and at times supports the universities. Furthermore, 100% of the sample also noted that the amounts reconsidered by the Higher Education Fund, illustrated by the Scientific Research Support Fund were insufficient to support libraries' subscriptions. Table 10 shows the suggestion to activate the CoE's role in database subscriptions for member libraries.

Table 9. Responses to statements regarding problems and challenges facing libraries related to the Ministry of Higher Education when participating in database subscription through the Centre of Excellence.

	Statement	I Totally Agree		I Agree		I Disagree		Total	
		n	%	n	%	n	%	n	%
1	There is difficulty in establishing a consistent policy or a strategy for participation in databases that would be adopted by higher education	19	57.6	11	33.3	3	9.1	33	100
2	The financial support of libraries by higher education institutions has fluctuated based on their participation in databases	28	84.8	5	15.2	0	0	33	100
3	The amount granted by the Higher Education Fund, illustrated as the Scientific Research Support Fund, to support library subscriptions to the databases is insufficient	33	100	0	0	0	0	33	100

Table 10. Responses to statements regarding how database-sharing problems might be solved or alleviated.

	Statement	I Totally Agree		I Agree		I Disagree		Total	
		n	%	n	%	n	%	n	%
1	Managers of member libraries support the idea that database subscription should be through the coordination between the Ministry of Higher Education and CoE, not through the university	26	78.8	5	15.2	2	6.1	33	100
2	The degree of your support for the The higher Education Minister deducts the cost of participation directly from the budgets allocated to universities and forms a committee of member libraries to establish a clear and consistent policy to participate in the databases	17	51.5	11	33.3	5	15.2	33	100
3	The degree of your support for the development of long-term contracts with database providers to reduce the cost of subscription and increase the stability of participation in the databases	22	66.7	7	21.2	4	12.1	33	100

Managers of member libraries support the idea that database subscription should be through the coordination between the Higher Education Minister and the CoE not through the university. Additionally, the results revealed that it is necessary for the Higher Education Minister to deduct the cost of subscription directly from the budgets allocated to the universities and to form a committee of member libraries to develop a clear policy. It shows that long-term contracts with the database suppliers were working well to reduce the cost of subscriptions and to increase the stable participation in the databases.

Discussion

This study aims to investigate the use of international databases that Jordanian public university libraries subscribe from the libraries consortium to find the feasibility of subscribing to them and the consortium's role in rationalizing subscription costs. To do so the study has developed three research questions. To answer the first research questions How do libraries benefit financially from subscribing through the CoE' This research found that by subscribing to the databases which are managed by the CoE there is a clear economic feasibility. Because this is seen from the findings that the number of research papers published by Jordanian researchers after the formation of Coe has doubled. It not only just doubles the paper published but has also reduced the expenses of libraries through the participation of databases in the CoE. This study is also inline with the studies by Saraireh (2016) and Athameneh (2016) which state that consortia and their role in reducing expenditures through coordination, cooperation, and sharing between libraries, particularly among public libraries and universities in Jordan. In agreement with the current study, Hamad (2022) stressed the need for the preservation and development of research knowledge for the end users to have access to relevant information about the economic and political situation during the pandemic covid-19 era.

The second research question what extent are faculty members using the databases the answer is, this is shown from the findings that databases that have books and full text are more used as they do not limit use for faculty members or to postgraduate students. Which can see by Piwowar et al. (2018) stated that open-access articles received more citations than an average article. Furthermore, the results showed that the majority of the participants agree that participating in databases through CoE has achieved financial savings compared to individual participation and they also agree that there is administrative feasibility and cost savings which is in line with the findings of Pan and Fong (2010) the return on investment and cost-benefits of one consortium contain five separately administered libraries in the University of Colorado (CU) administration found that flexibility and size of this institution-based consortium allow it to be successful and responsive in collaborating across 4 campuses despite different sized budgets and institutional constraints and uniquely local. This also agrees with the findings of Shivarama et al. (2018) and Shetty (2020) which showed that consortia libraries have appeared to experience a growing rise in the electronic resources

budget.

Lastly, the third question about the challenges and problems facing libraries when taking to databases found that the most serious challenge experienced by libraries was the disparity of budgets between member libraries. This indicates that one library may be able to subscribe to some databases, but another may not be able due to a lack of allocated funds. Annual subscriptions to databases fluctuate between the addition of new databases and the cancellation of others because of the lack of a fixed, approved budget by the universities for their libraries. Additionally, there are difficulties in consistent policy or developing a strategy to participate in the databases that would be addressed by the Higher Education Minister. Financial support for libraries by the Higher Education Minister has led to a fluctuation in their participation in databases. Al-Jaradat (2021) in line with the present study revealed that Jordan has lagged in the management of research data from all the government institutions as well as funding agencies which serves as an impediment to the growth of the university libraries. However, the Jordanian Public University Libraries (JPUL) are devoted to providing research data management services for the preservation of the data and providing online access to the data repository for ease of service. However, these services were provided on a limited scale curating some valuable research data. The study further addressed the lack of data preservation policies and their ineffective implementation (Al-Jaradat, 2021). In agreement with the present study Hamad and Al-Fadel (2022) asserted to improve the data management in public libraries in Jordan for the development of the Sustainable Development Goals. The author stressed the lack of libraries in Jordan for the research purpose and the carelessness in the data management of the data obtained. The study results support the fact that academic libraries significantly contribute to the study Goal, and provide access to up-to-date data (Hamad and Al-Fadel, 2022).

The gap between the available skills and the required skills required to keep the data management system intact is wide. Therefore, the study recommends to full fill this gap by conducting workshops and training programs time-to-time for the maintenance and management of data. Moreover, online services for the accessibility of the data are recommended to be enhanced for the data to be accessible to the entire public. This recommendation will improve the quality of research by providing relevant information for the data repository which will automatically provide development policy framing,

infrastructure, data archiving, sharing, cataloguing, etc.

Conclusion

The study concluded that the utilization of international databases that subscribe through a libraries consortium by Jordanian public university libraries has helped them in achieving the feasibility and their goal of rationalizing expenses by subscribing through consortium however there are some challenges in national strategy development for consistent subscription policy database. They can help the decision-makers in building a consistent policy for subscriptions. It will provide the solution for overcoming the mitigated budget issue to establish consortia.

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Conflicting Interests

The author declares no conflicting interests.

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