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Libraries and Intellectual production in the field of Library & Information in the centennial of the Jordanian state: An

Analytical Study

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Abstract

This study aimed at shedding light on the progress of the library movement in the centenary of the Jordanian state, by defining the role of libraries and operative institutions in this field, in addition to measuring the reality of the published intellectual production of books and periodicals qualitatively, objectively, and temporally using the descriptive analytical approach (bibliometric). The beginning was from the library of al-Salt School Library in 1926, then followed by public and university libraries, represented by the University of Jordan Library in 1962, accompanied by the establishment of the first institute for teachers to grant a diploma, which evolved into a master's degree in 2007. The total published intellectual production amounted to 1268, most of which were published during the period from (2010-2014), dealing with the topic of types of libraries, and analysis showed that Professor Ribhi Ilayyan ranked first in terms of the most productive authors with (90) publications. The study recommended the importance of finding standards and legislation that support libraries and motivate the support of the library reality financially and morally, raising the efficiency of graduates, and supporting authorship in library science.

Key Word: Jordanian state, Analytical Study, Teaching Library & Information Science in Jordan , Development of Libraries in Jordan, Measurement of Productivity of Authors

Introduction

During the years of the establishment of the Jordanian state in 1921, Jordan witnessed a wide renaissance in various fields, including libraries. This was accompanied by a wide interest on the part of those in charge of developing this vital sector in society, and this was represented by supporting and establishing libraries in various parts of the Kingdom.

The establishment of the first school library in 1926 at al-Salt Secondary School represented the beginning of the educational and cultural process of this country, followed by simultaneous developments, represented by the establishment of the first public library in 1957 in the city of Irbid, which constituted a major turning point in the interest in spreading societal culture and consolidating the role of libraries as an effective tool in raising the societal and cultural awareness of the people of the society.

The process of development continued to reach the decade of the sixties, when the library movement witnessed an acceleration in its growth, which culminated in the establishment of the university libraries, whose establishment came to accompany the establishment of the University of Jordan. The University of Jordan Library was established in 1962, which is considered the first Jordanian university library. As for libraries of public institutions, the Amman Municipality Library was established, which is responsible for establishing branch libraries in the Capital, Amman. With regard to professional associations concerned with library work and cadres working in the field of libraries, the Library and Information Association was established in 1963, and it still undertakes its mission to support the library movement in Jordan

The march of achievements must be reflected in the reality of authorship and publishing in the field of libraries, for the first intellectual product in the field of libraries, for the first intellectual product in the field of libraries was created, which was the book on "classification" issued in 1965 by the late "Mahmud al-Akhras", and in the field of issuing specialized periodicals, the publication of "Rislat al-Maktabah" journal in 1965, by the Jordan Library and Information Association, represented a clear imprint in the course of library work and specialized intellectual production in libraries, and for the purpose of keeping pace with developments in the library

movement and the publishing world, its name has been changed to the "Jordanian Journal of Libraries and Information", bearing in mind that it is the Arab periodical that has not stopped since its issuance until now.

The march did not stop here, as those in charge of the library movement worked to open the teaching disciplines of library science, as the beginnings of teaching library science at the diploma level took place in the academic year of 1966/1967 at the "Teachers Institute/ Amman", then the matter developed to a higher diploma in 1977 at the University of Jordan. The successes culminated in the establishment of al-Balqa Applied University in 1997, which adopted the specialization of libraries and information, and the establishment of the first department in it in the College of Planning in the year of 1999. Then in the academic year of 2007/2008 the University of Jordan sought to open a master's program in library and information science.

Now we are in the centenary of the Jordanian state, it is necessary to deliver a study outlining the stages of development that the library sector has gone through, in order to shed light on the achievements, and to serve as a road map for the march to continue and to increase the achievements according to well-thought-out plans that work to raise the cultural, scientific and moral level of the people of the country, and there is no one better than libraries to play this lofty role, as all the libraries and their affiliates strive to create and develop it for the sake of elevation and dignity of this country.

Significance of this Study

The importance of this study is highlighted by shedding light on the great developments that accompanied the life of the Jordanian state, and the great interest that the state has given to the library sector and the sectors related to it, by highlighting the followings:

1. Introducing the importance of the role of libraries of all kinds, and what they worked to accomplish and build during the centenary of the Jordanian state.
2. Introducing effective institutions in the field of library work, and the reality of the work they do.
3. Introducing the march of successive achievements in the field of libraries during the centenary of the Jordanian state from the side of teaching library science and the developments it has gone through.
4. Shedding light on the reality of published intellectual production during the centenary of the Jordanian state through measurements of published intellectual output (books and periodicals) and qualitatively analytical, temporarily and objectively.

5. Introducing the more productive authors and highlighting the nature of co-authoring relationship between authors, both in terms of individual and joint authorship.

This study aims to highlight the role played by the Jordanian state in its support for a vital area of society, which is the topic of libraries, as the developments that accompany libraries indicate and reflect the scientific and cultural development of society, represented by the different groups of members of society benefiting from their services, such as: students of schools, students of universities and various community institutions. The renaissance of peoples and their development are usually measured by the renaissance of their libraries, and the increase in their scientific and cultural production.

Study Questions

This study seeks to answer the following questions:

1. What are the types of libraries that had the first prominence in the life of the Jordanian state?
2. What are the features of the development witnessed by the teaching of library and information science during the centenary years of the Jordanian state?
3. What are the features of the published intellectual product in the field of library and information science, according to the variables: type, time, the most authored topics, in addition to calculating the authors' productivity, their nationalities and co-authoring?

Methodology

This study adopted the descriptive analytical approach, by following the next steps:

1. Inventory of the fields covered by the study represented by the collection of information related to the field of library types, the field of library science teaching, and the field of

- inventory and analysis of intellectual output in the field of library and information science.
2. Tracing the chronology of the establishment of the various libraries in Jordan during the centenary of the Jordanian state.
 3. Analyzing the intellectual output published in Jordan qualitatively, temporally, and objectively, in addition to analyzing the productivity of authors in the field of library science and their nationalities, in addition to co-authoring.
 4. Coming up with results that show the stages that libraries went through, the teaching of their sciences, and their intellectual output during the centenary of the Jordanian state.

Limitations of the Study

Objective limits: types of libraries, teaching library science in Jordan, Jordanian intellectual output in the fields of library and information science.

Qualitative limits: the published sources of books and articles published in "Risalat al-Maktabah" (Currently the Jordanian Journal of Library and Information)

Time limits: since the establishment of the Jordanian state.

Literature Review [Previous Studies]

Several studies were carried to study the reality of libraries in Jordan, and studies also were conducted that dealt with the reality of teaching in libraries, and other studies that dealt with the analysis of Jordanian intellectual output in the field of library and information science according to different time periods, while the researchers have come across, there is no study similar to the current study in which the previous three aspects were analyzed together during the centenary of the Jordanian state.

fore, some studies that dealt with any of the previous themes in the study and analysis, or studies similar to the current study, will be presented, and they will be presented from the most recent to the oldest.

In Jordan, the study conducted by al-Samirrai (2021) aimed at extrapolating the reality of the educational output published in the Jordanian Journal of Educational Sciences, and to identify the

general and precise features of the objective educational disciplines published in it since its establishment in (2005) to (2019), using the descriptive analytical methodology, and its tool, the Content Analysis Card, to study qualitative variables and objective analysis of the intellectual content of articles. The study procedures began with the analysis of (431) articles, containing (1631) keywords, to form the nucleolus of the open coding of thematic grouping, then the free head strategy was adopted. As a result, 21 sub-topics were grouped under seven comprehensive thematic categories. The results indicated the predominance style by (97%) compared to the educational style (21%). It was also found that the researchers' abilities to choose the keywords for their articles decreased by (51.9%), with a closeness to the ratios of duo and individual authors, and collectively they got what they got (89.72%) in favor of the male researchers to the female ones, noting the stability in the volume of the article productivity in the last three years, equivalent to a speed in publishing research that does not exceed six months as a maximum, at a rate of (92.6%).

The study recommended to encourage researchers to opt for research and authorship in educational topics, and to balance thematic themes, with the development of participatory authorship, and to work on expanding the role of the journal to become a comprehensive research center for educational research.

In Egypt, the study conducted by Muhammad (2009) aimed at identifying the characteristics of Arab intellectual production in the field of library and information science at the beginning of the twenty-first century in the period from 2005 to 2009, by analyzing this intellectual production, and studying the linguistic, topical, geographic and temporal distribution, in addition to the distribution of responsibility, to know the characteristics of authorship in terms of individual authorship and joint authorship among Arab researchers in the specialization, in order to reach results and indicators for the future.

The researcher analyzed the intellectual production published in library & information field during the period of 2005 to 2009, through studying the quantitative and qualitative attitudes and identifying the various features in terms of: time distribution, geographical distribution, qualitative distribution, linguistic distribution, topical distribution, and the contribution of authors, whether individual or co-authorship or translation, and other roles played by authors category.

The results of this study can be reviewed as follows: diversity of Arab intellectual production in library & information field during the period in question, and in categories of the various intellectual production, from journal articles, to conference papers, to books, to dissertations & thesis, in addition to book chapters. Journal articles ranked first in terms of category of resources

in which intellectual production is published, followed by books and then by dissertations then by conference papers and symposiums, where book chapters ranked the fifth and last.

The topic of information utilities grabs the largest number of subject headings, followed by the topic of library & information (in general), then comes the topic of information resources and product, and topic of technical processing and services, and then comes the topic of library & information specialists, then comes information technology, followed by archives, and then comes the library & information services, followed by topics of laws and legislation, and in the last rank comes the topic of management of library and information centers. Researchers in the library & information science preferred the individual authorship, although this is the dominant feature in theoretical disciplines, where this appears as a defect in the system of scientific communication.

In Algeria, the study conducted by Shayrah (2006) at aggregating the intellectual production in Algeria in the library & information science, during the period from 1963 to 2004, and studying its quantitative, qualitative, formal and topical attitudes, in order to identify the extent of the usage of students and researchers to that intellectual production in their studies, in addition to studying the teaching of library science in Algeria, and those authors who ranked first in productivity. The volume of the analyzed production touched 1527 sources, where unpublished information resources consisting of conference papers and dissertations ranked first

Thirdly: Statistical Analysis

The analysis of the results will be presented in three themes:

First Theme: The First beginnings of the Development of Libraries in Jordan During the Country Centenary

Table (1) shows the historical hierarchy of the beginnings of the emergence and establishment of libraries of all kinds in Jordan, arranged in descending order, as follows:

Library Type	Date	Library Name	Location
School Library	1926	Al-Salt Secondary School	Al-Salt
Public Library	1957	Irbid Municipality Library	Irbid
University Library	1962	University of Jordan Library	Amman
Specialized Library	1973	Royal Scientific Society	Amman
National Library	1977	Department of Libraries & National Documents	Amman

Table (1) Historical Hierarchy of Libraries in Jordan

Through Table (1), it is clear that the historical development of libraries started with the school, for schools are the source of intellectual development, from which the rays of knowledge radiate, and it was natural for the emergence of the first library to be linked to the establishment of the first library school at al-Salt Secondary School in 1926.

This result indicates the importance of the school, and the association of the scientific and cultural renaissance of society with its existence, as an incubator institution for all activities that work to raise the scientific and cultural level. Hence, schools must work to enable the library to become the luminous lamp that helps the school community in all its spectrum from drawing from it, so that it can perform the role assigned to it.

School libraries continued to play the role entrusted to them until 1957, from which Irbid Municipality announced the establishment of the first public library concerned with community culture and the provision of library services to the local community in Jordan, and the city of Irbid embraced this honor.

During this period, the services provided to the community expanded to work on its growth and development, where the establishment of the University of Jordan in 1962 was an indication of the accelerating steps in development, and development in awareness and community culture was clearly reflected on the community, this resulted in the establishment of the first Jordanian university in Amman, and it is natural that its establishment coincides with the establishment of its library, and this achievement reflects the great importance of the library, because it works on fulfilling the needs of its teaching cadres, students, staff, and local community.

The developments did not stop there, where the interest in scientific research had clear repercussions on the establishment of the specialized libraries, which was translated by the establishment of the Royal Scientific Society, where this society works through the services it provides to raise the scientific and research level in all fields in Jordan. Also, most of these efforts have an authority working to collect its product, rearrange it, publish it, and introduce it at the locally, Arab, and global levels, here, the role of the National Library (the Department of National Libraries and Documents) emerged, and its establishment came based on the awareness of those in charge of the importance of this national documentary edifice that works to collect, preserve and document the national heritage that the Jordanian state has experienced during the hundred years of its establishment.

Second theme: the Stages of Teaching Library & Information Science in Jordan

As a result of developments that the education sector in Jordan has witnessed during the centenary of the Jordanian state, it was necessary that this stage shall be managed by specialized librarians in this field in order to deliver best services that keep pace with developments in the

world of libraries and information, therefore, work must be done to prepare specialized and qualified cadres to carry out these functions and duties to the fullest.

Table (2) shows the chronological progression of teaching and qualifying specialists in library and information science in Jordan, as follows:

Teaching Stage	Teaching Institution	Establishment Date
Diploma (2 years)	Teachers Institute / Amman	1966/1967
High Diploma	University of Jordan	1977
Community Colleges (University Intermediate Diploma)	Ministry of Education	1980
Bachelor's degree	Al-Balqa Applied University	1999
Master's Degree	University of Jordan	2007/2008

Table (2) Timeline of the beginnings of teaching library & information science in Jordan
Through the analysis of Table (2) it was found that the first beginnings of teaching library and information science in were in the 1966/1967 academic year, at the diploma level for two years, and the beginning was at the Teachers Institute / Amman.

The Institute produced a group of specialized cadres that contributed to raising Jordan's position in this field, and this is not evidenced by the large numbers that worked in the field of libraries at the level of the Arab world, whether in school libraries or in various library and information institutions.

With the establishment of Jordanian universities, it became urgent to open the specialization of libraries at the level of Higher Diploma to qualify library workers, especially in the technical aspects of library specialization. The beginnings of this program were in 1977, and continued until 1999, and contributed to the addition of another group of professionals and specialists who made their mark and assumed responsibility for developing the library work, not only at the level of Jordan, but also at the level of the Arab world.

During this period, the Ministry of Education in Jordan worked in 1980 to open the specialization of libraries, and started teaching it at the level of the Intermediate Diploma, and adopted by community colleges scattered throughout the provinces of Jordan, and large numbers of professionals and specialists and worked as librarians, most of whom have been assigned to school libraries.

The teaching of library and information science at the bachelor's level began in 1999 at al-Balqa Applied University, a university that included all community colleges extending from north to south. It began teaching its first classes at the College of Planning at the University Center in Salt city. In order to keep pace with developments in the field of library and information science, master's level education had to be opened to keep pace with those developments, especially with the graduation of a group of distinguished students who desire to continue their higher education, in addition to attracting students from the Arab world who want to complete their higher education in the field of library and information science, when the Faculty of Education at the university of Jordan adopted in 2007 the opening of the first master's degree course for Jordanian and non-Jordanian students to provide the library arena with specialized staff and keep pace with the tremendous developments in library and information technology.

Third theme: Measurement of intellectual product published in Library and Information Science.

The movement of authorship and publishing in the fields of library and information science began in 1965 with the publication of the classification book written by the late, Mahmud al-Akhras. To highlight the features of the intellectual output published during the centennial of the Jordanian state, this theme was divided into several aspects, and can be reviewed as follows:

1. Analyzing the intellectual output (books and periodicals) published in the arena of library and information science according to type: Table (3) shows the volume of the intellectual output published during the centennial of the Jordanian state, represented by books and articles published in "Risalat al-Maktabah", which became later as "the Jordanian Journal of Libraries and Information", where the output has been divided into (11) time periods, each extends for five years, starting from 1965, which constituted the first Jordanian intellectual output, as shown in Table (3)

Time Periods	Number of Published Books and Percentage	Number of Published Articles and Percentage	Total of the Output Based on Years and Percentage
1 1965-1969	3 (2%)	115 (10%)	118 (9%)
2 1970-1974	3 (2%)	124 (11%)	127 (10%)
3 1975-1979	5 (3%)	89 (8%)	94 (7%)
4 1980-1984	8 (5%)	137 (12%)	145 (11%)
5 1985-1989	10 (6%)	100 (9%)	110 (9%)
6 1990-1994	3 (2%)	102 (9%)	105 (8%)
7 1995-1999	18 (12%)	86 (8%)	104 (8%)
8 2000-2004	6 (4%)	77 (7%)	83 (7%)
9 2005-2009	17 (11%)	66 (6%)	83 (7%)
10 2010-2014	47 (30%)	105 (10%)	152 (12%)
11 2015-2020	36 (23%)	111 (10%)	147 (12%)

Total & Percentage	156 (100%)	1112 (100%)	1268 (100%)
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Table (3): shows the volume of published output (books and articles) in library & information science during the centennial of the Jordanian State

Upon analyzing the content of Table (3) we can sort the values according to ranks each period achieved as shown in Table (4) below:

Time Periods		Number of Published Books and Percentage	Number of Published Articles and Percentage	Total of the Output Based on Years and Percentage
1	2010-2014	47 (30%)	105 (10%)	152 (12%)
2	2015-2020	36 (23%)	111 (10%)	147 (12%)
3	1980-1984	8 (5%)	137 (12%)	145 (11%)
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8	1995-1999	18 (12%)	86 (8%)	104 (8%)
9	1975-1979	5 (3%)	89 (8%)	94 (7%)
10	2000-2004	6 (4%)	77 (7%)	83 (7%)
11	2005-2009	17 (11%)	66 (6%)	83 (7%)
Gross Total & Percentage for Each Source		156 (100%)	1112 (100%)	1268 (100%)
Percentage of the Total Intellectual Product		156 (100%)	1112 (100%)	1268 (100%)

Table (4) Volume of Intellectual output Published in the Field of Library & Information Science According to the Studied Time Period Sorted Descending.

By analyzing Table (4), it was found that the volume of intellectual production during the country's centenary began with small numbers of books, paralleled by a large publication of articles in "Risalat al-Maktabh". The following time periods also witnessed fluctuation in the volume of published intellectual production, which is explained by the economic, security, and cultural conditions accompanying each time period. However, the process of intellectual production in the field of library & information science witnessed its climax in the last ten years of the life of the Jordanian state, from (2010-2020), with close percentages of (12%) for each period for both types of production, and this increase is compatible with the developments in the Jordanian library arena, through increase in the volume of publication of books and articles, both by researchers from inside Jordan and from Arab countries in the field of library & information science, in addition to an increase in authoring on emerging topics in library & information science. In addition, Jordan witnessed stability compared to the neighboring Arab countries, which encouraged many researchers and writers to specialize in libraries for publishing in Jordan, which reflected this rising increase in the volume of intellectual output.

2. Analysis of Intellectual production in Library & Information Science According to subject

The intellectual output published during the centenary of the Jordanian state was counted, totaling (1268) sources, was distributed into 20 main subject categories that were dealt with this in the intellectual output published in the field of library & information science, as shown in Table (5):

- It is well known that the number of topics covered in one source is multiple, so the number of topics exceeded the number of published sources.

Rank	Main Topic in Library & Information Science	Number
1	Library Types	302
2	Bibliography and Bibliographic Control	92
3	Information Technology	91
4	The Internet	86
5	Teaching Library & Information Science	86
6	Cataloging and Catalogs	84
7	Library and Information Services	81
8	Library Automation	79
9	Libraries - Conferences	78
10	Libraries in Jordan	78
11	Classification (Libraries)	77
12	Library Organizations	75
13	Reading and Juvenile Literature	70
14	Library Information Systems	65

15	Bibliographies	57
16	Information Storage & Retrieval	55
17	Information Networks and Databases	42
18	Libraries – Training	40
19	Archives	36
20	Electronic Publishing	32

Table (5) Shows Top 20 Subject Categories in the Authorship in Library & Information Science Through the analysis of Table (5), it was found that the volume of authoring in the subject of library types is still dominant over the volume of the researched output. The reason may be due to the fact that authoring on the subject of digital and electronic libraries and the topics that revolve in their astronomy is considered the most prominent topic, and also the need to write educational resources for students of library and information majors in Jordanian universities contributed to the abundance of authorship in it, with the total of (302) topics, especially that the library types course is offered within university courses, whether in the diploma or the bachelor's stage, as well as the master's stage.

It is noted that the topics related to the technological development of libraries represented by (information technology and the Internet) gained attention, and occupied the top advanced ranks within the fields of library & information science, in order to keep pace with the rapid technological developments in libraries worldwide.

Although the subject areas of the technical procedures of libraries came within the second ten category of interest in authorship, this indicates that these topics are still renewed, and authorship in them still attracts researchers, especially with the interest of all workers in the field of library & information science to involve these topics to keep pace with the rapid technological developments in this specialty.

3. Measurement of Productivity of Authors

The productivity of the authors was divided into several sub-measures related to the size of the authors' productivity, identifying the nationalities of the producing authors, in addition to identifying the nature of authorship according to the gender variable, and the nature of individual and joint authorship among them, as shown below.

3/1 The Most Productive Authors in the Field of Library & Information Science (Measuring the Productivity of Authors)

Many researchers and writers in the field of library & information science were keen to supplement the library arena with their intellectual productions, which clearly contributed to the development of the Jordanian library movement.

To measure the volume of the intellectual output prepared by them, the first ten authors, the most productive in the field of library & information science.

Table (6) shows the names of the top ten authors, the most productive during the centennial of the Jordan state.

* What meant here by productivity (books and articles authored by one author)

Rank	Author's Name	Number of Works
1	Ribhi Mustafa Ilayyan	90
2	Mahmud al-Akhras	67
3	Mahmud Itayyim	43
4	Najeeb al-Shorbaji	28
5	Yusuf Qandil	27
6	Yunus al-Shawabikah	21
6	Faruq Mansur	21
8	Mari Fashih	20
8	Fuad Farsuni	20
8	Sudqi Dahbur	20

Table (6) shows that Professor Ribhi Mustafa Ilayyan ranked first in terms of the most productive authors in the field of library & information science, and his books varied in all topics of library & information science, in addition to the diversity of his production between books and articles over the period of his scientific production, at a rate of (90) between article and book. Followed by the late, Mahmud al-Akhras, whose books and translations contributed to supply the library scientific movement with valuable resources and solid research that students of library & information science still cite in their authorships.

3/2 Measurement of Author Productivity According to their Nationalities.

For the purpose of calculating the productivity of authors according to their nationalities, the nationalities of the authors publishing books and articles approved in this study were verified.

* Usually more than one author participates in preparing books or articles, or one author may produce more than one source. Table (7) shows this as follows:

Rank	Author's Nationality	Number of Published Sources
1	Jordanian	1001
2	Iraqi	124
3	Algerian	52
4	Saudi	16
5	Egyptian	14
6	Palestinian	8
7	Libyan	8
8	Sudanese	6
9	Kuwaiti	5
10	Omani	4

Through the analysis of Table (7), it was found that the Jordanian nationality ranked first for the authorship in the field of library & information science, followed by the Iraqi nationality. The reason for this may be due to the conditions that Iraq witnessed since 1980, and the events that followed to this day, where Jordan is considered the cultural gateway to Iraq for the dissemination of their research and intellectual production, while Egypt, Palestine, and Sudan mediated the list of producers, while the Gulf countries were less interested in authoring in Jordan, so Kuwait and the Sultanate of Oman occupied the last ranks.

3/3 Distribution of the Intellectual Production in the Field of Library & Information Science According to Gender

When calculating the productivity of authors according to gender, the following was found:

Rank	Gender	Number	Percentage
1	Male Authors	949	74.84%
2	Female Authors	319	25.16%
Total and Percentage		1268	100%

Table (8) Distribution of the published Intellectual Production according to gender

It is clear from Table (8), that the predominant nature of authorship is for the male author, with a total of (949) and a percentage of (74.84%), and this can be explained by the fact that male

faculty members are more in the field of library & information science than women, and the promotion instructions in universities require that faculty members publish annual research for the purposes of promotion, whereas most of the specialists in library & information science work in school libraries, they are preoccupied with administrative burdens, which reduces the opportunities and scope of preparing research and studies in libraries.

3

3/4 Distribution of Intellectual Production According to the Nature of Authorship.

What is meant by the nature of authorship is individual authorship or joint authorship between researchers, and joint authorship is divided into several types, including duo authorship, joint authorship between 3 authors, joint authorship between four authors, etc. Table (9) highlights this issue:

Rank	Nature of Authorship	Number	Percentage
1	Individual Authorship	1091	86%
2	Joint Authorship (2 Authors)	136	10.7%
3	Joint Authorship (3 Authors)	26	2.1%
4	Joint Authorship (4 Authors)	15	1.2%
Total and Percentage		1268	100%

Table (9) Shows the nature of the individual or joint Authorship

Table (9) shows that individual authorship is the dominant feature of authoring in the field of library & information science, where the total numbers of individually authored sources amounted to "1091" by "86%", and this indicates that authors usually tend to present their ideas without resorting to lengthy discussions with other authors. Moreover, most of the authors from the university teaching staff tend to publish their research individually to contribute to their promotion, according to the promotion instructions in their universities. The joint authorship (2 authors) came second (whether between the same gender or between two genders), where it is noted that percentages are low and the partnerships are few among them, although the joint authorship works to expand perceptions and ideas, and enhance intellectual exchange in the field of library & information science.

Study Outputs and Recommendations

Outputs:

- The first beginnings of libraries in Jordan were associated with school in 1926.
- The public library has contributed to the provision of its services to various segments of society, where its establishment has been associated with municipalities, expanding the number of public libraries.
- University libraries in Jordan were distinguished at the Arab level, and were among the first libraries to contribute – in addition to providing traditional and non-traditional services to the university community and the local one – to carry out large-scale Arab and regional tasks.
- University libraries have been distinguished by their services globally and at the Arab level, and have become a center for depositing: United Nations Publications, Arab university dissertations, and Arab journals.
- The published intellectual output of books and articles touched 1268.
- Professor Ribhi 'Ilayyān is considered at the top list of the most productive authors in library and information science field in Jordan, where he published 90 sources.
- The total number of published books in library and information science in Jordan touched 156 (with 12.3%).
- The journal articles published in library and information science furnished the Arab library arena with many contributions, where the total number of articles published during the last 100 years mounted 1112 articles (with 87%), and this figure represents the productivity of "Rislat al-Maktabah" journal , which did not stop since its established date, until its title has been changed to be "the Jordanian Journal of Library and Information Science".
- Jordan is considered one of the leading Arab countries in terms of teaching library and information science, where it was one of the first Arab countries to graduate professional cadres specialized in library and information science, most of whom worked in libraries inside and outside of Jordan.
- Al-Balqa Applied University through its colleges (Salt Humanitarian College, Irbid University College, Alia University College, in addition to Karak University College) which teach library and information management, contributed to providing the local and Arab market with specialized and qualified cadres to keep pace with global developments in the field of libraries.
- The time period from 2010 to 2020 was one of the most productive years for information sources in the field of library and information science, with 299 sources, due to the stability that Jordan has witnessed in recent years.

Recommendations:

1. Working towards creating standards and legislation that support libraries of all kinds.

2. Working towards opening a Ph.D. Program in library and information science.
3. Working towards allocating independent budgets for public libraries.
4. The necessity of finding school libraries in every school.
5. The necessity of employing library graduates to keep pace with the rapid developments in the fields of library and information science.
6. Urging the authors to joint authorship by supporting researchers and encouraging them for scientific exchange among them.
7. Working towards supporting joint scientific research, and allocate prizes and rewards for researchers and authors.
8. Working towards issuing a refereed scientific journal in the field of library and information science, supervised by al-Balqa Applied University.

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