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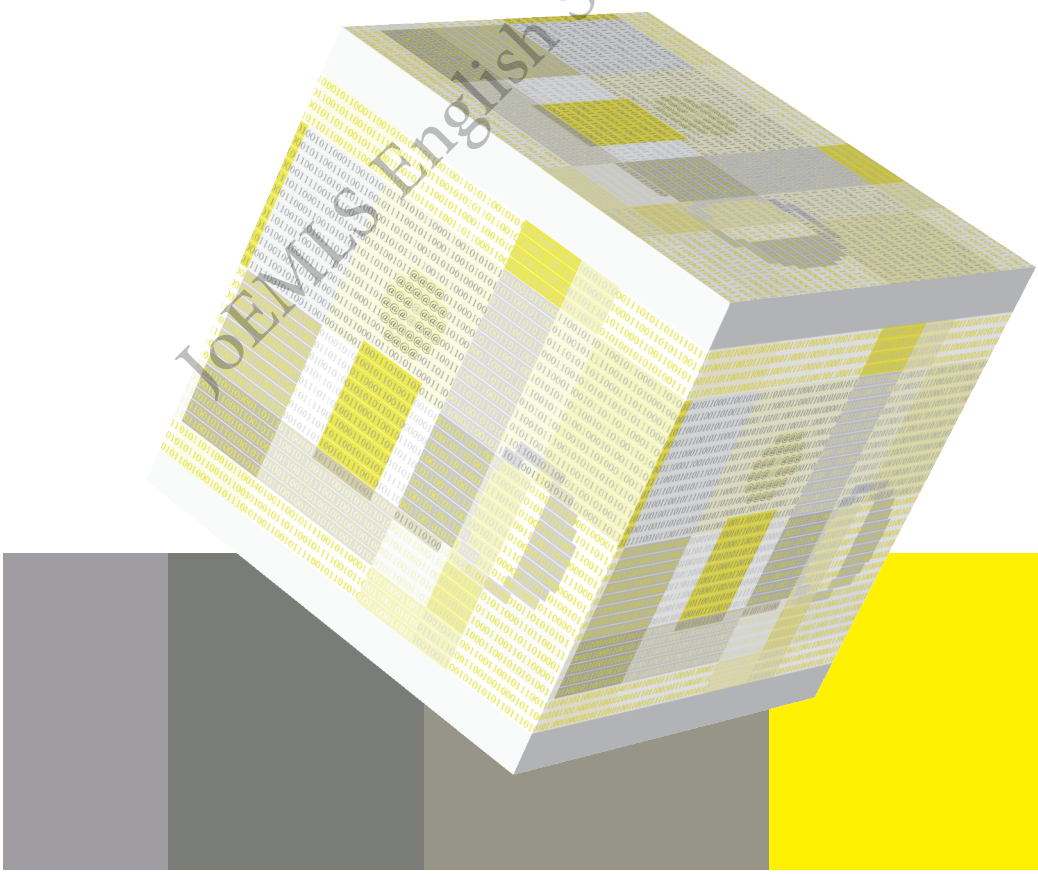
JoEMLS English Summary



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教育資料與圖書館學 JOURNAL OF EDUCATIONAL MEDIA & LIBRARY SCIENCES Vol. 56, No.2, 2019

教育資料與圖書館學，始於1970年3月創刊之**教育資料科學月刊**，其間於1980年9月更名為**教育資料科學**，並改以季刊發行。自1982年9月起易今名。另自2016年11月起，改以一年出版三期（3月、7月、11月）。現由淡江大學出版中心出版，淡江大學資訊與圖書館學系和覺生紀念圖書館合作策劃編輯。本刊為國際學術期刊，2008年獲國科會學術期刊評比為第一級，2015年獲科技部人文社會科學研究中心評定為教育學門專業類A級期刊。並廣為海內外知名資料庫所收錄(如下英文所列)。

The JOURNAL OF EDUCATIONAL MEDIA & LIBRARY SCIENCES *(JoEMLS)*, published by the Tamkang University Press and co-published with the Department of Information & Library Science (DILS) and Chueh Sheng Memorial Library, was formerly the ***Bulletin of Educational Media Science*** (March 1970 – June 1980) and the ***Journal of Educational Media Science*** (September 1980 – June 1982). In 2015, The *JoEMLS* is acknowledged as the A class scholarly journal in Taiwan by Ministry of Science and Technology (MOST). Since November 2016, the *JoEMLS* has been changed from quarterly to a tri-annual journal, published in March, July, and November.

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JoEMLS English Summary

教育資料與圖書館學 封面意義：躍升於紙本印象上的數位與網路化圖書資訊圖騰。
The cover design of ***JoEMLS*** signifies:
L (Librarianship); **I** (Information Technology); **B** (Bibliophile and the Book trade)

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JoEMLS 編輯政策

本刊係採開放存取（Open Access）與商業資料庫付費途徑，雙軌發行之國際學術期刊，兼具電子版與紙本之平行出版模式。本刊除秉持學術規範與同儕評閱精神外，亦積極邁向InfoLibrary寓意之學域整合與資訊數位化理念，以反映當代圖書資訊學研究趨勢、圖書館典藏內容與應用服務為本；且以探討國內外相關學術領域之理論與實務發展，包括圖書館學、資訊科學與科技、書業與出版研究等，並旁及符合圖書資訊應用發展之教學科技與資訊傳播論述。

Open Access 典藏政策

*JoEMLS*向來以「綠色期刊出版者」（Green Publisher / Journal）自居，同意且鼓勵作者將自己投稿至*JoEMLS*之稿件，不論同儕評閱修訂稿與否，都能自行善加利用處理，但希望有若干限制：

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JoEMLS Editorial Policy

The *JoEMLS* is an Open Access (OA) Dual, double-blind reviewed and international scholarly journal dedicated to making accessible the results of research across a wide range of Information & Library-related disciplines. The *JoEMLS* invites manuscripts for a professional information & library audience that report empirical, historical, and philosophical research with implications for librarianship or that explore theoretical and practical aspects of the field. Peer-reviewed articles are devoted to studies regarding the field of library science, information science and IT, the book trade and publishing. Subjects on instructional technology and information communication, pertaining to librarianship are also appreciated. The *JoEMLS* encourages interdisciplinary authorship because, although library science is a distinct discipline, it is in the mainstream of information science leading to the future of **InfoLibrary**.

Open Access Archiving

The *JoEMLS*, as a role of "OA green publisher/journal", provides free access onlined to all articles and utilizes a form of licensing, similar to Creative Commons Attribution license, that puts minimal restrictions on the use of *JoEMLS*'s articles. The minimal restrictions here in the *JoEMLS* are:

(1) authors can archive both preprint and postprint version, the latter must be on a non-commercial base;
(2) publisher's PDF version is the most recommend if self-archiving for postprint is applicable; and
(3) published source must be acknowledged with citation.

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EDITORIAL

JoEMLS to Launch an Open Peer Review Model—Features and Announcements

In this very issue of *JoEMLS*, we officially launched the open peer review (OPR) model and named it "Open Point" in our system. The OPR model adopted in *JoEMLS* has been carefully planned and designed, with consideration of various factors, including the willingness of manuscript reviewers and authors, our journal's decisive power of inviting submissions of manuscripts, design of forms of review opinions and responses, citation formats of review opinions and rebuttal letters, assigning of digital object identifier (DOI), planning of editorial workflow for adopting OPR in our journal, and the layout design of an OPR journal in digital format. From now on, we will keep working on improving measures regarding the OPR, and encouraging and rewarding participants in our OPR journal. We humbly know the success of OPR might not be gained with just one launch announcement, and we have following steps and patience for realizing the goal. We are pragmatic enough to know that the OPR is not only an innovative management model of scholarly publishing, but also a test of humanity, regarding how people communicate and interact, how people consider the benefits of the rewarding mode of submitting manuscripts, and how people balance between their inner dialectics and authority implementation. Therefore, the OPR model of our journal is internationally unique at this stage. We look forward to seeing more journals follow our steps and broaden the path in the future.

JoEMLS English Summary

In this issue (Issue 2, Volume 56), thirteen manuscripts were received and reviewed, and five of them were accepted, with a rejection rate of 61.5%. The outstanding articles published in this issue include "An Exploratory Study of the English Articles on the Authorship in Library and Information Science" by Shu-Hwei Yeh and Ming-Yueh Tsay, "A Content Analysis of Online Physician Information" by Chia-Chi Lin and Ming-Hsin Phoebe Chiu, "Survey on the Thesis Legal Deposit and Authorization at University Libraries in Taiwan: Rethinking of Open Access and Industry Policy" by Jeong-Yeou Chiu and Yun-Wen Lee, "The Journey of a South American Scientific Journal: Its Quest for Global Publication" by Chris Fradkin, and "Open Access Journal Publishing in Sri Lanka: Characteristics and Future Potential" by W. M. Tharanga Dilruk Ranasinghe and Jun Min Chung.

In this issue we started with these two articles "A Content Analysis of Online Physician Information" and "Survey on the Thesis Legal Deposit and Authorization at University Libraries in Taiwan: Rethinking of Open Access and Industry Policy" to announce the launch of the OPR model, and look forward to having more positive feedbacks and interactions in the future, and collecting more articles with OPR opinions and responses. We are leading and marching toward a new era of adopting OPR models in academic journals.

Jeong-Yeou Chiu
JoEMLS Chief Editor

JoEMLS English Summary

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Research Article

An Exploratory Study of the English Articles on the Authorship in Library and Information Science

Shu-Hwei Yeh[ab] Ming-Yueh Tsay[c*]

Abstract

The studies of research productivity and authorship of theses published apply the method of bibliometrics. Through the method, the studies utilize the results of quantitative analysis to discuss and explore the results and trends of research activities and the direction of manpower development in academic communities. Through the exploration and analysis of the authors' productivity and the distribution of manpower structure, the potential of research and development of a particular field or subject and the current situation of research talents of the field or subject can be revealed. In this study, LISA and EBSCOhost- Library, Information Science & Technology Abstracts databases were selected and we got a total of 219 English articles in the field of library and information science published from 1961 to 2016. With the content analysis and bibliometric approach, this study investigates the results include published years, research methods, research designs and samplings, subjects of literatures, content items of research and analysis. Moreover, this study conclude authors' patterns, institutional affiliations, degree of collaboration between institution and countries and core authors.

Keywords: *Library and information science, Research productivity, Authorship, Bibliometrics, Collaboration*

JoEMLS English Summary

SUMMARY

Introduction

Academic standing of researchers, research activeness of academic research institutions, development of academic fields, and a nation's international academic competitiveness, all rely on academic publishing. Various bibliographic records were representative collections of academic publishing results. Thus, the results of a bibliometric analysis of each content item of bibliographic records, including

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titles, authors, research institutions, journals, published years, and topics, can facilitate a further understanding of the academic communication of a specific academic field. Authorship studies focus on investigation of various types of authors, including individual authors, co-authors, group authors, interdisciplinary authors, and cross-region authors. The exploration of the complicated structures of output works by different types of authorship has become an important part of informetrics study.

In this study, academic papers written in English on authorship studies in library and information science were collected and analyzed. The methodologies, research samples or subjects, sources of journals and databases, topics of previous literature, and analytical items were identified, for revealing the status quo of authorship studies in library and information science. In addition, a statistical analysis of authors on this topic was conducted, for identifying authors' institution types, structures of job titles, cooperation among authors, co-authorship across institutions and nations, and high-productivity authors, for the reference of who are interested.

Research Method

Content analysis and bibliometric analysis were adopted in this study. Academic papers written in English were drawn from two databases, Library and Information Science Abstract (LISA) and EBSCOhost—Library, Information Science & Technology Abstracts. The last date of searching in the databases was set as March 31 of 2017. Academic papers qualified for this study must be empirical studies with rigid structures, including literature review, research design, methodology, and study results. A total of 219 academic papers were qualified for this study.

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Results and Suggestions for Future Studies

In this study, an analysis of academic papers written in English was conducted for investigating the research situations and content aspects of authorship studies in library and information science. Inductions and explanations were provided on eight aspects, including (1) published years, (2) research methods, (3) sample sources, (4) years of research, (5) author objects, (6) content items of research and analysis, (7) research topics, and (8) authorship analysis.

Authorship studies in library and information science started in 1961, and new studies have been conducted and published since 1979. More than 10 papers on this topic have been published every year since 2011. The bibliometric approach has been adopted as the major methodology, and Lotka's Law, Bradford's Law and Price's Law have been incorporated since 1981. Social network analysis (SNA) has been used for analyzing the co-operative networks among authors since 2005. The visualiable technique of constructing graphics has been used since 2012 to investigate knowledge communication among authors, as

well as co-operative social networks across nations, institutions and disciplines.

Features of research sources and subjects have been revealed in studies on authorship of single journal (33%) and authorship of specific nations or geographical areas (36.53%). These studies focus on authorship of certain years, and development features of research manpower in these nations or geographical areas. The most published are studies on authorship in the United States and India. Authorship studies on research topics reveal that bibliometrics is the most investigated topic. In addition, authorship studies regarding electronic or open access journals are also another trend of research. In recent years, studies on topics such as digital libraries, digital literacy and scientometrics have revealed new results. As to content items of research and analysis, more than half of the academic papers focus on analysis of single authors and co-authors, and numbers of papers published by different types of authorship. Other analyzed features include institutional rankings, core authors, education levels, professional background, and age structures.

The statistical analysis of authors revealed that more than 80 percent (86.36%) of authors had only one academic paper on this topic, but more than 50 percent (51.14%) of academic papers were co-authored, suggesting that co-operative research was a common phenomenon in authorship studies. Authors majorly came from three types of institutions, including departments of library and information science in universities, university libraries, and non-library and information science departments in universities. A high percentage of these authors were not in departments or research institutions in library and information science, suggesting that other academic fields were also involved in bibliometric studies on authorship in library and information science.

As to the status quo of co-operative research across institutions, nearly half of co-authored academic papers were cooperative research across institutions, among which authors of departments of library and information science and authors of university libraries had most co-authored papers with external institutions, and the two groups of authors also had close cooperative relationships with each other. In addition, cooperative researches among institutions of non-library and information science departments were also worth noting.

As to job titles or types of authors, teaching faculty (of departments of library and information science and other departments) and librarians were the major research groups. Institutions of the studied authors came from 34 nations, with the top two being the United States and India. In addition, only a few academic papers (6.39%) were co-authored across nations, of which the authors majorly came from the United States, India, and Malaysia. Authors from the United States, India and Iran had the most academic papers as the first authors.

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Eleven high-productivity authors were identified according to the ranking of the number of papers they published. These authors belonged to non-library and information science departments, university libraries, and departments of library and information science in universities, in nations including the United States, India and Iran.

The social network analysis and visualiable technique of constructing graphics have been used to investigate cooperative relationships among academic societies. It has been the directions and trend of authorship studies in recent years. It is suggested that this methodology can be used to investigate cooperative researches across disciplines, institutions and nations, for understanding development features of research manpower. The structure analysis of authors' education levels, ages, professional backgrounds and genders is another feasible research approach, facilitating a further understanding of the deep structures, societal factors and objective environments regarding research manpower.

JOEMLS English Summary

ROMANIZED & TRANSLATED REFERENCE FOR ORIGINAL TEXT

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Research Article

A Content Analysis of Online Physician Information[ψ]

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Abstract

The popularization of the Internet reduces the communication cost of physicians' information. It is easier for customers obtaining the online physicians' information to make medical decisions. Thus, this study aims to analyze the disclosure of physicians' information on the Internet, find out the contents, numbers, and the characteristic of physicians' personal information and professional information, and understand how the information describes physicians' image. The sample size is 4,500 which collected from the Google search engine, and the study framework contains the types of website, the physicians' personal information, the physicians' professional information, and the additional descriptions about physicians' image. This study conducts the content analysis, and the results are shown to provide some suggestions to the physician information seekers and physician information providers.

Keywords: *Online physician information, Physician information disclosure, Choosing a physician, Choosing a doctor, Content analysis*

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SUMMARY

Introduction

Physician information refers to the information that the public can obtain from physicians' medical practices, including physicians' professional backgrounds and personal information, such as education, experiences, medical practice information and award records. People with needs of seeking medical advice might need to obtain physician information from all aspects, compare, and make final decisions. At this time of prosperous internet development, people can obtain more physician information from the internet without limitations of time and space. Physicians' background and evaluation information have been made public and disseminated on the web. People are both information disseminators and receivers. The physician information obtained from the web might form

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[ψ] This article is based on the first author Chia-Chi Lin's master thesis "Content Analysis of Physicians' Information on the Internet."

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people's first impression of a particular physician, no matter whether that physician is chosen for seeking medical advice in the end.

In this study, the content analysis approach was adopted to investigate the presentation of the content of online physician information. The four research questions include (1) what are the types of websites containing physician information? (2) what are the disclosed contents of physicians' personal information, and what to what level does it disclose? (3) what are the disclosed contents of physicians' professional information, and what to what level does it disclose? and (4) what are the approaches used to complement physicians' images in the online physician information? In this study, distribution of online physician information has been analyzed according to different medical specialties and website types, for the public to seek online physician information based on their own needs, and for the information providers to understand information presentation and to enhance information quality.

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Review of Literature

The review of literature contains two parts. First, it discusses the information asymmetry in the medical setting, and how information disclosure may solve the problem of information asymmetry and achieve the goal of patient empowerment. Second, it presents healthcare provider information and physician information to provide an analytical framework for this current study.

In summary, studies on online physician information has been widely conducted in the context outside of Taiwan. However, in Taiwan, few studies have been focusing on general public's medical choice and preferences, rather than on the analysis of textual and visual content of online physician information. Therefore, this study aims to investigate the online physician information available in Taiwan, and to assess its quantity to ensure sufficient and adequate information is available for people's medical decision-making.

Research Method

In this study, the search engine Google was used as the research tool, and "physician's name + (space) + doctor" was used as the keywords combination to search and retrieve web pages that contained online physician information. The results of searches on the webs were the research subjects. The purposive sampling approach was adopted to obtain 20 records of 15 physicians in 15 medical specialties, with a total of 4,500 records. The period of data collection was from January 4, 2018, to April 16, 2018. The fifteen medical specialties included family medicine, general medicine, general surgery, pediatrics, obstetrics and gynecology, orthopedics, neurosurgery, urology, otolaryngology,

ophthalmology, dermatology, neurology, psychiatry, rehabilitation medicine, and plastic surgery.

In this study, the four aspects of analysis framework included types of websites containing physician information, physicians' personal information, physicians' professional information, and complemented descriptions of physicians' images. Data of each webpage under investigation was recorded and encoded in Excel, and the frequency distributions, percentages and means of physicians' personal information, professional information and complemented descriptions of physicians' images in different medical specialties and website types were calculated. Two intercoders were responsible for coding 250 records independently, and these 250 records were randomly selected from the samples. Intercoder reliability was then calculated by checking the agreement between coders in each analysis category. The intercoder reliability between the primary researcher and the first intercoder was .65, and the between the primary researcher and the second intercoder was .76, which achieved high agreement.

Research Results and Findings

1. The type of websites from which people tended to obtain online physician information was social network sites (17.91%), because there were a variety of social network users who would mention physicians in various social networks, and thus generated more physician information. The most disclosed item of physicians' personal information was gender (34.02%).

2. The medical specialties of plastic surgery and general surgery had the most physicians' personal information online, and the major website type was news media sites.

3. The most frequently disclosed content of physicians' professional information online was physician's belonged medical institution. The three most disclosed information included belonged medical institutions (85.24%), medical specialties (72.64%) and job titles (52.33%). Especially in medical specialties of ophthalmology and plastic surgery which had a higher medical risk and higher medical expenses, people needed more physicians' professional information for making decisions of seeking medical advice. Physicians' professional information was majorly obtained from official websites of belonged medical institutions (M = 8.32).

4. Physicians' web images were frequently presented with visual information, especially in the medical specialty of plastic surgery, physicians' head images or videos were frequently used to build authoritative images, assisted with behavioral information, such as explanations of medical cases, for enhancing the public's sense of trust in physicians. Social network sites also had

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a great help in building physicians' web images of visual level (M = .63). For the convenience of social network sites, users of various identities had the willingness to share physicians' images or videos, thus the visual information was presented the most in social network sites. However, it needs to further verify whether the account owners of these social network sites were actually physicians or medical institutions. Now it has become easier to save and re-distribute online data, and physicians' gender information and visual information (such as photos) might be used fraudulently, thus it is worth reminding that the public need to attend to the credibility of obtained information.

Conclusions and Suggestions

It is suggested that further research should do the sampling according to the percentages of actual numbers of physicians in different medical specialties, for revealing a distribution that is closer to the actual data. In addition, interviews or surveys should be conducted on the public, for understanding whether online physician information meets the public's actual needs. Information quality evaluation is also another important issue. It is suggested that quality analysis should be based on health information evaluation guidelines and relevant regulations that the government have issued on medical information, and expert validity analysis should be conducted for generating a measure for evaluating online physician information, and thus helping the public choose online physician information of good quality.

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Research Article

Survey on the Thesis Legal Deposit and Authorization at University Libraries in Taiwan: Rethinking of Open Access and Industry Policy[ψ]

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Abstract

Owing to the price increases in article distributing and scientific publication, the academics have been demanding for "Open Access" resources in recent years. However, whether academic publications belong to public property or not remains undetermined. This article that begins with the discussion of the attributes of thesis & dissertation in terms of public information was to explore the Open Access policy impact of all the stakeholders who have involved in the scholarly database marketplace. Eleven university libraries in Taiwan and two main commercial and non-commercial university degree paper database providers including one national legal depository were interviewed. This study also aimed to demonstrate a virtual cooperation of industry-government-university under the rapid and various development of academic service and high international competition environment. Concerning the right interpretation about electronic thesis authorization, legal deposit policy and its management related issues, the finding showed that many university libraries were charged with managing the thesis deposit within their duties but lack of regulation consistency and sensitivity of academic ethic. We believed that it is a fundamental long-term solution for a virtuous cycle of industrial survival and academic development. University libraries' thoughtful consideration for authorization policy and the government's good timing for choosing OA, both will be of great importance to the success of the thesis deposit policy.

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Keywords: *Theses and dissertation, University library, Legal deposit, Authorization model, Electronic thesis, Open access.*

[ψ] This article is based on the following papers: Yun-Wen Lee, "The Influence of Open Access on Scholarly Publishing and Academic Libraries for the Electronic Thesis in Taiwan" (master's thesis, National Chengchi University, 2018), Jeong-Yeou Chiu "Issue on the Licensing and Public Reading of Degree Papers: The Myth of Open Access Policy," *JoyoChiu's Pages*, January 15, 2017, https://joyochiu.blogspot.com/2017/01/open-access.html; and Jeong-Yeou Chiu, "Reviewing the Open Access Policy of Theses and Dissertations in Taiwan: A Study through Business Model Comparison of International Database Companies" (paper presented at the 2018 ETD: Beyond the Boundaries of Rims and Oceans - Globalizing Knowledge with ETDS of National Central Library and The Networked Digital Library of Theses and Dissertations, Taipei, Taiwan, 28 September, 2018).

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SUMMARY

Introduction

In recent years, there is a call for open access (OA) in academic fields and government units of Taiwan, but theoretical discourses and concrete policies are not available yet. The government has started to modify laws regarding making academic information public, for responding to the call for open access and for meeting the trend of information digitization. Therefore, in addition to academic journals, degree papers (including master theses and doctoral dissertations) as a big chunk of academic information, have received a great deal of attention and involved discussions leading to myths about open access. However, the fact is, not all academic information comes from public sectors.

For facilitating the conformance and expediency of degree paper management policies, some questions have to be clarified first. Therefore in this paper, the largest two information service providers in academic societies (the academic database industry and legal deposited libraries) and relevant stakeholders (including the most directly involved authors of degree papers and libraries of universities from where those authors are graduated), were investigated for their opinions about the promotion of policies regarding open access to digital files of degree papers, strategies of collection and value-added applications, and authorization management, as well as the impacts of these policies and strategies on them. The relationships and impacts of relevant regulations and actual implementation in libraries were also investigated.

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Research Background and Problem Statement

The major issues discussed in this paper are stated below. Can all degree papers be labeled as public information and categorized into public property of copyrights, thus become one of targets of open access policies in academic fields? Can degree papers of academic information be defined as public information?

Among all academic resources, degree papers are no doubt academic publishing works involving individual creations which are entitled to protection of intellectual property rights, but in theoretical and practical regulations, degree papers are still not defined as published works. In addition, with different natures of university libraries in private and public sectors, there are questions regarding defining information as of public or private sectors. When institutional depository or archiving is no longer the only destination of academic publishing works (especially degree papers), and when there is a trend of emphasizing other practical uses, such as being circulated, retrieved and cited in scholarly communication, non-commercial operations might not fulfill all the responsibilities and meeting all the needs, and the incorporation of commercial

operations might be leading to solutions. The largest two collectors of degree paper databases in Taiwan are the National Central Library (NCL) and the Airiti, and Airiti is the one involving profit-seeking enterprise. The building of free resources might be directly removing obstacles of knowledge access, but will inevitably inhibit the growth of the scholarly publishing industry, and might even lead to wasting of resources or losing of momentum for promoting scholarly publishing, due to a lack of competitive environments.

Research Design and Results

In this study, the Airiti as the industry unit, and NCL as the public sector unit, along with librarians (or university library directors) who were responsible for degree paper deposits in 13 university and college libraries, were interviewed. Interviews were conducted through on-site visits, assisted with telephone or email contacts. The purpose of interviews was to investigate the interviewees' opinions about the open access issue regarding degree papers. We intended to find out whether libraries and copyright holders were willing to agree upon the authorization of making public of digital files of degree papers, along with copyright holders' considerations for making public of degree papers, and the status quo of authorization in different universities. From interviews with librarians, the current situation of degree paper access by library users was indirectly investigated.

Research results were categorized into two themes—policies regarding open access of degree papers, and authorization modes. Corresponding reviews and reflections were also provided. In addition, from the interview analysis, it was shown that most interviewees considered degree papers be put on the track for open access, but regarded non-open access or delayed open access as optional choices. Impacts of non-open access or delayed open access on copyright holders, libraries and library users were also investigated. Among these choices, there might be considerations regarding copyright holders' involvement in plagiarism or citation misconducts. It was revealed that when promoting open access policies, academic misconducts could easily become potential obstacles.

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Conclusions

At this moment, we are discovering and caring about the academic and commercial values of scholarly publishing industry. The industrial output values are calculated by the gross revenue, which relies on the survival of the industry and the scale of returns and benefits it brings to the whole country, universities and library users. Following this logic, is it wise to insist on blindly promoting open access policies in Taiwan, where it is with limited resources? Meanwhile, it is also farfetched and dangerous to define degree papers as government information or public information. The government and academic field in Taiwan

should be cautious about the development contexts and contextual differences of the international open access movement, and should participate in the movement step by step. The government should balance between meeting the public interests and assisting Taiwan's scholarly publishing industry for participating in international competitions. It should also balance between protecting intellectual property rights and not compromising library information services, for promoting development of scholarly publishing industry, and even the digital content industry. Taiwan, where Chinese is as the major academic language, is an important communication platform for degree papers generated in areas using Chinese language across the Taiwan Strait, including Taiwan, China, Hong Kong and Macau. However, due to passive and defensive measures adopted by the government, there is a lack of active policies for assisting the scholarly publishing industry and addressing open access issue that meet Taiwan's interests. It thus easily makes Taiwan's scholarly publishing industry a weak market environment. In another words, it is wise to create an environment where the scholarly publishing industry and the academic field have positive relationships. University libraries should review the content of policies regarding authorization and deposit of degree papers, and the government should cautiously choose the timing for developing open access policies.

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ROMANIZED & TRANSLATED NOTES FOR ORIGINAL TEXT

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10. 2018年11月28日總統令公布修正學位授予法，其中第16條第1項規定：「取得博士、碩士學位者，應將其取得學位之論文、書面報告、技術報告或專業實務報告，經由大學以文件、錄影帶、錄音帶、光碟或其他方式，連同電子檔送國家圖書館及所屬大學圖書館保存之。」同條第2項：「國家圖書館保存之博士、碩士論文、書面報告、技術報告或專業實務報告，應提供公眾於館內閱覽紙本，或透過獨立設備讀取電子資料檔；經依著作權法規定授權，得為重製、透過網路於館內或館外公開傳輸，或其他涉及著作權之行為。但涉及機密、專利事項或依法不得提供，並經大學認定者，得不予提供或於一定期間內不為提供」。資料見中華民國總統府，「修正學位授予法」，總統府公報 7394號（2018年11月28日）：52-58，https://www.president.gov.tw/File/Doc/b3765f27-a8cb-44fa-a06b-d3b3de604811。【Office of the President, ROC (Taiwan), "Xiuzheng Degree Conferral Law," *Presidential Office Gazette*, no. 7394 (November 28, 2018): 52-58, https://www.president.gov.tw/File/Doc/b3765f27-a8cb-44fa-a06b-d3b3de604811. (in Chinese)】

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14. 公部門資訊「合理反映成本」之意義並非就是以營利手段為務，而是授權私部門做資訊開發與加值後產生之新資訊及利潤，也應當合理的回饋給原著作權擁有者（可含公私部門）或原創作者（個人），這些加值後的資訊內容可能成為有價資訊，但因為此加值的成果乃是間接利用自社會大眾的稅捐與勞力智力付出（例如：公立大學或公部門研究機構）所致，因此，必須適時合理的反映成本並注重公平成本效益，此意義乃是公共資訊「收費」概念之緣由。參見邱炯友，「政府電子出版品暨資訊之開發與應用：英國著作權觀點之省思」大學圖書館 3卷4期（1999年10月）：117-18。【Jeong-Yeou Chiu, "The Development of Electronic Official Publication and Information: A Reflection of the UK Copyright

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20. 張世賢、陳恆鈞，公共政策：政府與市場的觀點，增二版（台北市：商鼎文化，2001），9。【Shih-Hsien Chang and Hen-Chin Chen, *Gonggong Zhengce: Zhengfu Yu Shichang De Guandian*, Rev. and 2nd. ed. (Taipei: Shining Culture, 2001), 9. (in Chinese)】

21. 按一般學術論文引文格式之規範下，學位論文在未經出版機構再予出版發行之情形下，單單獲取學位的博碩士論文皆被歸類為「unpublished」之作品；據此，我國教育部與大學亦有相同之見解。

22. 邱炯友、李偉寧、李逸文，「學位論文數位化之可行性研究：問題與展望」，圖書與資訊學刊，29期（1999年5月）：32，http://blis.lib.nccu.edu.tw/fulltext/29/29_3.PDF。【Jeong-yeou Chiu, Wei-ning Lee, and I-wen Lee, "The Applicability in Digitized Theses and Dissertations: The Problems and the Prospects," *Journal of Librarianship and Information Studies*, no. 29 (May 1999): 32, http://blis.lib.nccu.edu.tw/fulltext/29/29_3.PDF. (in Chinese)】

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24. 相關資料見「立法院第二屆第二會期教育、法制兩委員會併案審查委員吳梓等擬具〔學位授予法第三條條文修正草案〕及行政院函請審議〔學位授予法修正草案〕案第一次聯席會議」，立法院公報 83卷，4期（1993年12月27日）：546-83。【"Legislative Yuan Di Er Jie Di Er Huiqi Jiaoyu, Fazhi Liang Weiyuanhui Bingan Shencha Weiyuan Wu Zi Deng Niju [Degree Conferral Law Di San Tiao Tiaowen Xiuzheng Caoan] Ji Executive Yuan Hanqing Shenyi [Degree Conferral Law Xiuzheng Caoan] An Di Yi Ci Lianxi Huiyi," *Legislative Yuan Gazette* 83, no. 4 (December 27, 1993): 546-83. (in Chinese)】

25. 1993年12月27日，立法院第2屆第2會期教育、法制兩委員會第一次聯席會議，併案審查委員吳梓等擬具（學位授予法第三條條文修正草案）及行政院函請審議（學位授予法修正草案），當時委員們對此條文的討論係第6條第2項維持為：「藝術類或應用科技類研究所碩士生，其論文得以創作，展演連同書面報告或以技術報告代替」；其中，

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席間周荃委員認為，針對藝術類論文有展演部分，應以光碟或錄影帶保存，遂提議增列第3項：「前項論文應以文獻、光碟或其他方式予中央圖書館保存之。」資料見「學位授予法：中華民國83年4月14日全文修正」，立法院法律系統，https://lis.ly.gov.tw/lglawc/lawsingle?00315EADC0520000000000000000A000000002000000^01713083041400^0010A001001。【"Degree Conferral Law: Zhonghuaminguo 83 Nian 4 Yue 14 RI: Quanwen Xiuzheng," Legislative Yuan Falu Xitong, https://lis.ly.gov.tw/lglawc/lawsingle?00315EADC0520000000000000000A000000002000000^01713083041400^0010A001001 (in Chinese)】

26. 蕭雄淋，「學校未經同意得否就研究生博碩士論文電子檔送存國家圖書館？」，蕭雄淋說法（部落格），最後更新於2016年12月4日，http://blog.ylib.com/nsgrotius/Archives/2016/12/04/25033。【Hsiung-Lin Hsiao, "Xuexiao Wei Jing Tongyi Defou Jiu Yanjiusheng Boshuoshi Lunwen Dianzidang Songcun National Central Library?" Hsiung-Lin Hsiao Shuofa (Blog), last modified December 4, 2016, http://blog.ylib.com/nsgrotius/Archives/2016/12/04/25033. (in Chinese)】

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47. 業者華藝公司訪談資料，作者訪談資料，台北，2018年6月29日。【Airiti Inc., interview by author, Taipei, June 29, 2018. (in Chinese)】

48. 十五校分別為淡江大學、國立臺灣大學、國立台灣師範大學、國立臺北科技大學、國立交通大學、國立清華大學、國立中央大學、中原大學、國立中興大學、逢甲大學、國立成功大學、國立中正大學、國立中山大學、國立東華大學、國立臺灣科技大學。

49. 由於部分單位負責的業務人員職務交接，或主管與負責業務人員共同受訪，故出現受訪人數多於訪談單位之情況。

50. 馮靖惠，「學生簽名…不知論文授權給了誰」，聯合新聞網，2014年7月28日，http://udn.com/news/story/6885/475936。【Ching Hui Feng, "Xuesheng Qianming... Buzhi Lunwen Shouquan Geileshui," UDN.com, July 28, 2014, http://udn.com/news/story/6885/475936. (in Chinese)】

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53. 中華民國總統府，「修正學位授予法」。【Office of the President, ROC (Taiwan), "Xiuzheng Degree Conferral Law." (in Chinese)】

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The Journey of a South American Scientific Journal: Its Quest for Global Publication

Chris Fradkin

Abstract

As with most emerging-nation journals, South American scientific journals struggle in their efforts to reach the global market. Nonetheless, there are exceptions to this trend. This paper chronicles the journey of one of those exceptions, the Brazilian journal ***Psychology & Neuroscience****. I focus on events leading up to and consummating the publishing partnership between Psychology & Neuroscience and its current publisher, The American Psychological Association. An analysis is presented that examines the journal in terms of its publication language, business model, editorial stability, editorial board makeup, and the international qualities of its editors. I present this with the hope it may be useful to emerging-nation scientists and scholars, as well as publishers and institutions, that share similar objectives of distributing their findings to the global market.*

Keywords: *Internationalization, Globalization, Psychology, Brazil, Emerging nations, Science*

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Introduction

In Brazil, in the area of psychology, there are now two journals published in the global market: *Psychology & Neuroscience,* published by The American Psychological Association (APA), and *Psicologia: Reflexão e Crítica*, published by Springer. The advantages for these journals are manifold. The publishers provide the hosting platform, distribution, publication, and professional proofreaders and reviewers (Fradkin, 2017a; Landeira-Fernandez, Cruz, & Ventura, 2015; Remor, 2016). In addition, the association with a global publisher enhances the reputation of the journal considerably (Björk, 2015; Fradkin, 2018; Meneghini, 2012).

But what about these journals placed them in this fortuitous position? Did they have a method or template for success? Did they actively pursue a major publisher worldwide? Or were they simply in the right place at the right time? The answers to these questions are not particularly clear. There is sparse literature

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on journals of this sort. In light of this omission, this paper will examine the transition of one of those rare journals.

The subject of this study will be the journal *Psychology & Neuroscience,* the first Brazilian journal in its field to publish globally. Through emails and interviews, we will follow its transition from domestic to global publication. This work is presented with the hope that it may be useful to emerging-nation scholars, publishers, and institutions, who share similar objectives of strengthening their output, and distributing their findings to a larger market.

Chronicle of an Emerging Nation Journal

Background

The journal *Psychology & Neuroscience* was the initiative of a group of Brazilian neuroscientists with an educational background in psychology. Meeting for the first time in 2002 at the IX meeting of the "Associação Nacional de Pesquisa e Pós-Graduação em Psicologia" (ANPEPP, National Association of Research and Graduate Education in Psychology), by 2006 at the XI ANPEPP meeting, the group had committed to launching a new journal. The founding editors were respected experts in the field: J. Landeira-Fernandez of Pontifícia Universidade Católica do Rio de Janeiro (PUC-Rio), and Universidade Estácio de Sá; A. Pedro de Mello Cruz of Universidade de Brasília (UnB); and Dora F. Ventura of Universidade de São Paulo (USP). From its debut in 2008, *Psychology & Neuroscience* published articles and reports grouped in five thematic sections—Psychophysics and Perception, Clinical and Experimental Neuropsychology, Plasticity and Neural Development, Behavior/Systems/Cognition, and Neuropsychopharmacology. The journal is notable for being the first Brazilian journal in its field to publish exclusively in English. Startup was provided by members of the ANPEPP working group, but was sustained by grants (CNPq, FAPERJ, FAPESP, USP, PUC-Rio)[1] from 2009 onwards.

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Transition to global publication

The transition of *Psychology & Neuroscience* from domestic to global publication began at the XV Symposium on Research and Scientific Exchange of ANPEPP, in Bento Gonçalves, Brazil, May 6-9, 2014. In its seventh season, *Psychology & Neuroscience* was a relative newcomer in the field, although it had distinguished itself by publishing in English. At this gathering, Assistant Editor Daniel Mograbi approached Merry Bullock, Senior Director, Office of International Affairs of the APA, regarding the omission of *Psychology &*

[1] CNPq, Conselho Nacional de Desenvolvimento Científico e Tecnológico; FAPERJ, Fundação de Amparo à Pesquisa do Estado do Rio de Janeiro; FAPESP, São Paulo Research Foundation; USP, Universidade de São Paulo; PUC-Rio, Pontifícia Universidade Católica do Rio de Janeiro.

Neuroscience from an APA presentation on Brazilian journals in the field (D. Mograbi, personal communication, December 20, 2017). Bullock, apparently, had assumed that *Psychology & Neuroscience* was not a Brazilian journal, because its articles were published in English. Having clarified this point, the conversation shifted. Mograbi expressed his editors' interest in internationalizing the journal, through a partnership with a global publisher (D. Mograbi, personal communication, December 20, 2017). Bullock listened to his pitch. It appeared she was receptive.

In late May, Mograbi followed up. In an email to Bullock, he restated the editors' desire to find a publisher for the journal; he said they would be happy to discuss APA's involvement, if there was interest. He touted the journal's selling points:

> We are quite unique in the Brazilian context, because we only handle submissions in English and use Scholar One (provided by Scielo) as our editorial system. This has led to an increase in the quality of our articles, because we can rely on international referees during the peer-reviewing process. Also, we are one of the few journals, globally, to focus explicitly on the integration of Psychology with Neuroscience. (D. Mograbi, personal communication, May 29, 2014)

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Bullock responded the same day: "I am forwarding your note to the APA publisher, Gary Vandenbos." She also sent links to other publishers (M. Bullock, personal communication, May 29, 2014).

In mid-June, Jason Winkler, Director of Business Development at APA, wrote Mograbi: "Merry Bullock passed along your note about Psychology & Neuroscience—I reviewed several of the articles and I believe that APA would be a natural home to publish the journal" (J. Winkler, personal communication, June 16, 2014). Mograbi replied positively to APA's interest in the journal. He then posed several questions of his own: "In terms of our current structure, what would change?" he asked, and: "How could APA help the journal's expansion strategy, in terms of indexing and reaching a wider audience?" (D. Mograbi, personal communication, June 16, 2014). The two agreed to a Skype meeting.

Before the meeting, Winkler wrote: "While APA primarily publishes subscription-based journals, we are growing our open access portfolio. The journal would not necessarily need to lose its open access status if it is critical to the mission of the journal." In response to Mograbi's inquiry about expansion strategy, Winkler touted APA's proprietary databases, which would expose *Psychology & Neuroscience* to more than 60 million potential readers worldwide (J. Winkler, personal communication, June 17, 2014).

The first of several meetings between Mograbi, Winkler, and Editor Landeira-Fernandez, was held on Skype, June 18, 2014. The discussion covered: potential business models (OA, subscription); the complications of three entities owning *Psychology & Neuroscience*; the possibility of transferring ownership of *Psychology & Neuroscience* to one society; the existing structure of the journal; funding of the journal to this point; and the journal's presence in the SciELO database (D. Mograbi, personal communication, January 8, 2018).

The following week, Winkler sat down with Gary VandenBos, Publisher of the APA. In an email to Mograbi, he relays: "I met with the APA Publisher yesterday to discuss the opportunity to publish Psychology & Neuroscience. He shares my excitement about the opportunity and had a number of questions about the journal which I am outlining below." The questions addressed: ownership of the journal; number of submissions annually; payment of editors, copyeditors, and administrative staff; term of editors; and potential business models that would serve both parties' needs (J. Winkler, personal communication, June 24, 2014).

Mograbi responded to the questions. With regard to ownership of the journal, he wrote, "We expect to transfer ownership to IBNeC [Instituto Brasileiro de Neuropsicologia e Comportamento], which was founded in 2009 and has over 2,300 members." With regard to potential business models, he told Winkler that the editors were "considering changing to a subscription based system if we close a deal with APA." With regard to term of editors, he disclosed that "there is no short-term plan to change the editors, but in the future, as the journal becomes more competitive, we hope to attract international researchers for the editorial board, including new editors-in-chief." Mograbi also disclosed payment information for journal personnel and the number of submissions annually (D. Mograbi, personal communication, June 26, 2014).

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Within a few days, Winkler emailed options for potential business models. These included open access (OA) models funded by APCs, institutional investment, or membership dues from a society; and also a "delayed OA model." This last would be funded through individual and institutional subscriptions; and after an embargo period (~12 months), articles would become publicly available at no charge. Winkler also asked, "How does the journal currently handle conflicts of interest when an author from the editors' university submits?" (J. Winkler, personal communication, July 1, 2014).

Mograbi answered the next day:

> Thanks for your e-mail. As we mentioned before, we would be willing to lose our open access status if needed. If we decide to go for a hybrid model, than it seems to us that the first model (delaying open access) is the most appropriate in our case. (D. Mograbi, personal communication, July 2, 2014)

With regard to the review process, Mograbi wrote:

> [B]ecause we have 3 editors-in-chief from different universities, we can assign editors such that conflicts of interest are minimized. Essentially the journal admin will assign an editor according to the authors affiliation so that there is little interference in the reviewing process. (D. Mograbi, personal communication, July 2, 2014)

The next week, Winkler wrote back: "I agree that the delayed open access would be the most appropriate model to retain the journal's open access status." He said the next step from his end was to meet with VandenBos, and then come back with a proposal (J. Winkler, personal communication, July 8, 2014).

The first draft of the contract arrived on August 1 (J. Winkler, personal communication, August 1, 2014). To the surprise of Mograbi and Landeira-Fernandez, the contract specified a transfer of the journal to the APA. In a meeting with Mograbi, Landeira-Fernandez was particularly critical of the proposal, due in part to his years invested in the journal. Mograbi, on the other hand, while resistant to the idea, saw the proposal as an opportunity for dialogue (D. Mograbi, personal communication, August 1, 2014). A Skype meeting with Winkler was scheduled the same day.

In the meeting, Mograbi and Landeira-Fernandez were firm about retaining ownership of the journal. They agreed, however—in consideration of APA's preference for conducting business with societies and their aversion to dealing with institutions—to assign that ownership to IBNeC. A standard subscription model was agreed to. When discussing APA's financial investment in the journal, Winkler informed them that some societies were funded by the journal's profits. To this option, Landeira-Fernandez answered, "No." In his mind, he could not see the journal turning profit. When all points had been covered, Winkler said he would present their ideas to VandenBos (D. Mograbi, personal communication, January 8, 2018).

On August 11, the second draft of the contract arrived. The term was seven years, commencing January 1, 2015. Full ownership of the journal would be retained by IBNeC. APA would be responsible for all profits and all losses. It would be a standard subscription model, "with the option for the authors to pay to make their manuscripts open access" (J. Winkler, personal communication, August 11, 2014). Mograbi and Landeira-Fernandez were pleased with the results and sent the contract to editors Pedro Cruz and Dora Ventura (D. Mograbi, personal communication, January 8, 2018).

A Skype meeting was planned for August 14, between Mograbi and the three editors of the journal. Cruz emailed his endorsement (P. Cruz, personal communication, August 14, 2014) and thus the meeting was held between

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Mograbi, Landeira-Fernandez, and Ventura. As the contract was based on assigning the journal to IBNeC, this brought to the surface some contention. For some time, Ventura had been petitioning for the journal's recognition as an official publication of the Institute of Psychology at USP. Landeira-Fernandez and Mograbi reminded Ventura that APA conducted business primarily with societies, not institutions. After considering the exposure APA could bring to the journal, Ventura agreed to go with APA. There was one condition: that the names of the three editors and their respective institutions be included in a paragraph that defined editorial control (D. Ventura, personal communication, January 19, 2018).

With all three editors on board, Mograbi shared the news with Winkler. He also sent the text change from Ventura (D. Mograbi, personal communication, August 14, 2014). Winkler acknowledged the receipt: "Your recommended text looks straight forward—I will let you know what my legal counsel says" (J. Winkler, personal communication, August 14, 2014).

On August 22, the third draft of the contract arrived, which included the text change as requested. Mograbi emailed Winkler about a minor spelling change (D. Mograbi, personal communication, August 22, 2014). Winkler emailed back that he would send the contract off to legal, with Mograbi's change included. He said the processing might take several weeks (J. Winkler, personal communication, August 22, 2014).

On September 2, the fourth and final draft arrived.

On September 5, J. Landeira-Fernandez, on behalf of IBNeC and the three editors, signed the seven-year contract with the APA—with witness' signature and legal stamps.

On September 10, the final agreement arrived, countersigned by Gary VandenBos. In an email, Winkler sent his thanks to the editors for choosing APA, and said he looked forward to a successful future (J. Winkler, personal communication, September 10, 2014). Mograbi replied that he too did as well (D. Mograbi, personal communication, September 10, 2014), and with that the season's work drew to a close.

JoEMLS English Summary

Post transition

On March 16, 2015, APA announced by press release it was now the worldwide publisher of *Psychology & Neuroscience* (American Psychological Association, 2015). Mograbi was promoted to associate editor. He was promoted to editor in September, 2017. At this juncture, the three original editors assumed "founding editor" positions. By the end of 2017, the journal was in two more databases—Cabell's Directory of Publishing Opportunities in Psychology and Online Computer Library Center—but the critical database—Medline/PubMed—still eluded them. Surprising to the editors were the APA Publisher Reports,

which for 2015 and 2016 showed the journal made a profit. This unexpected boon was a thorn for Landeira-Fernandez, who had not envisioned the journal turning profit; and had declined the profit sharing model.

Analysis

In relation to its sister journals, *Psychology & Neuroscience* stood out from the crowd, well before its deal with APA. In terms of publication language, business model, editorial stability, editorial board makeup, and the international qualities of its editors, the journal had qualities unique within its field. I recap these qualities now with the hope they may be useful to other emerging-nation editors and publishers.

Publication language

Prior to its partnership with the APA, *Psychology & Neuroscience* was the first Brazilian publication in its field to publish content exclusively in English. At its inception in 2008, this was unique among Brazilian journals in the field, which, if publishing in English, restricted it to special English-language issues, or used it in a hybrid format (Portuguese, Spanish, English). Thus, the commitment of the journal, from volume 1, issue 1, was publishing in English for the global market. But publishing in English, by itself, does not make a journal global, due to the variability in translational integrity (Fradkin, 2015). Acknowledging this issue, *Psychology & Neuroscience* hired "two language reviewers (native English speakers who specialize in academic revisions)" for "assistance with language- and copy-editing" (Mograbi, 2014, p. 62). Their commitment in this area is consistent with the dual-stage approach to translation, which stresses the necessity of input from a native English-speaking scholar to smooth the draft into its final form (Fradkin, 2015, 2017b).

JoEMLS English Summary

Business model

Psychology & Neuroscience was one of the first journals to be supported by an ANPEPP working group rather than a university pós-graduação program.[2] This arrangement enabled the journal to pursue outside sources for support (e.g., CNPq, FAPERJ), an activity less feasible under the traditional Brazilian model. It also fit well with APA's preference for doing business with societies, rather than with academic institutions.

Editorial stability

Under the ANPEPP-based model, the three founding editors helmed the journal from 2008 to 2017, and provided a consistency in direction. This

[2] A pós-graduação program is the equivalent of a graduate program in the United States: it delivers Master's and Doctoral degrees (Gomes & Fradkin, 2015).

consistency would have been less feasible under the traditional pós-graduação program model, in which editors rotate every several years. Based on results, this served the journal well.

Editorial board makeup

Empirical research finds a positive relationship between the prevalence of editorial board members based at native English-speaking institutions and the publishing performance of the journal (Fradkin, 2017a). From its onset, *Psychology & Neuroscience* has had a higher prevalence of editorial board members based at native English-speaking institutions (27%; Psychology & Neuroscience, 2013) than most Brazilian journals in the field. The same holds true for manuscript reviewers, in that *Psychology & Neuroscience* has had a higher prevalence of manuscript reviewers based at native English-speaking institutions (35%; Mograbi, 2014) than most Brazilian journals in the field. These resources enabled *Psychology & Neuroscience* to expedite the review process, which streamlined the time from receipt of manuscript to its appearance in the publication (J. Landeira-Fernandez, personal communication, June 8, 2018).

International qualities of editors

Among the founding editors of *Psychology & Neuroscience,* two of them, Landeira-Fernandez and Ventura, earned their PhDs at institutions in English-speaking countries. This was also the case with Mograbi.[3] While other Brazilian journals at the time had editorial staff schooled in English-speaking countries, *Psychology & Neuroscience* had an advantage with three of its key personnel schooled immersion-style in English. This advantage is apparent in the email excerpts cited here, between Mograbi and native English-speaker Winkler. The clarity and coherence of Mograbi's English language emails is at the level of a native English-language speaker. From the perspective of a native English-speaking entity, this quality expedites the negotiating process.

DBMLS English Summary

Final Words

This paper chronicles the journey of an emerging-nation journal that resulted in a partnership with a global publisher. We have a journal that was founded by a handful of believers, bound together by a vision and a goal (Landeira-Fernandez, Cruz, & Ventura, 2008). And seven years from then, a chance encounter at a conference was the seed that helped that vision spring to life. While the story of *Psychology & Neuroscience* may be unique in its unfolding, in many ways it is a common tale. It is the tale of striving forward into areas unknown, without a map,

[3] Landeira-Fernandez: University of California, Los Angeles, CA, US; Ventura: Columbia University, NY, US; Mograbi: King's College, London, UK.

without a compass. Joseph Campbell might have called this the classic "hero's journey" (Campbell, 2008), with our editors, or heroes, forging forward towards their goal, and skirting obstacles they meet along the way. But when arriving at their goal, the elusive global market, our editors find further hills to climb. Thus this story, while completed in the sense of this one chapter, continues like a flower to unfold.

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Open Access Journal Publishing in Sri Lanka: Characteristics and Future Potential

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Abstract

The purpose of this study was to identify the problems faced by the scholarly journal publishing industry in Sri Lanka and to explore the opportunities provided by online open access publishing to overcome those problems. Both qualitative and quantitative methods were used in this study. A literature review was used to identify the problems faced by developing countries, including Sri Lanka, in scholarly journal publishing. Open access journals published in Sri Lanka were identified through secondary sources such as open access journal directories and indexing services. Data were manually collected by accessing eighty-four (84) journal homepages systematically through the links provided by above directories and indexing services. The study has found that Sri Lanka faces problems similar to the other developing countries in the scholarly journal publishing. At the same time, the study has recognized open access as an opportunity for Sri Lankan scholarly journals to overcome those issues. Suggestions were made to improve the open access journal publishing in Sri Lanka and measures were suggested to overcome possible future drawbacks. Despite several studies related to open access initiatives, there have been no substantial studies on open access journal publishing in Sri Lanka. Hence, the present study intended to fill that gap by reviewing related literature and analyzing open access journals published in Sri Lanka.

Keywords: *Developing countries, Open access, Open access journals, Scholarly journals, Scholarly publishing, Sri Lanka*

JoEMLS English Summary

Introduction

Scholarly publishing, a part of scholarly communication, is the process through which the newly discovered knowledge is refined, certified, distributed to, and preserved (Association for Research Libraries, 2000). Scholarly journals, first appeared in the mid-17th century, occupy a larger portion of scholarly publishing. Since then, the process of scholarly journal publishing has changed constantly mainly due to social contexts and technological advances. Meadows summarizes these changes as follows:

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> ...the most significant changes occurred as the result of the emergence of journals in the mid-seventeenth century, scientific societies in the eighteenth century, professionalization of research and expertise in areas of knowledge in the nineteenth century and, more recently, the emergence of the electronic world in the twentieth century. (Meadows, 1999, as cited in Costa & Leite, 2016, p. 34)

However, by the 21st century, scholarly journal publishing has been challenged due to several reasons. Firstly, researchers are dissatisfied with the traditional model of scholarly publishing that limits access to their research outputs. Secondly, developments in digital publishing, fueled by the Internet and related technologies, have enabled researchers to disseminate their research outputs without restrictions imposed by traditional publishing. These factors have contributed to the emergence of open access initiatives. The basic idea of open access is to "make research literature available online without price barriers and without most permission barriers" (Suber, 2012, p. 8).

Open access initiatives recommend a new model for scholarly communication by introducing two strategies. One of them is known as the "gold open access" that encourages researchers to publish their works in open access journals. The other is called "green open access" that encourages the works already published or accepted for publication to be deposited in digital open access repositories.

Although the open access movement was initiated by researchers and institutions mostly in developed countries, by today, developing countries are increasingly welcoming open access for two reasons. At first, open access enables researchers in these countries to access the literature once that was not affordable for them due to subscription costs. Secondly, open access increases the visibility of research works produced in developing countries.

JEMLS English Summary

Purpose and Objectives of the Study

Purpose of this study is to identify the issues faced by the scholarly journal publishing industry in Sri Lanka and to investigate the opportunities provided by open access publishing to overcome those issues. Specific objectives of the study are as follows:

- to identify the problems faced by Sri Lanka in scholarly journal publishing;
- to investigate the open access initiatives in Sri Lanka with special reference to open access journal publishing;
- to identify the characteristics of open access journals published in Sri

Lanka; and

- to recommend strategies to empower and sustain open access journal publishing in Sri Lanka.

Materials and Methods

This study used a mixed methods approach, and it is largely based on secondary sources. At first, a literature survey was carried out by using Google Scholar and Google search engines to answer the first two objectives of the study. Google Scholar was selected as it focuses only on scholarly literature such as journal articles. Google search engine was selected as it indexes gray literature such as reports, working papers, white papers, etc., that are not usually covered by Google Scholar.

The first objective of the study was to identify the problems faced by scholarly journal publishing in Sri Lanka. Authors conducted a literature search by using the following keywords and keyword phrases interchangeably: "scholarly journal publishing"; "scholarly publishing"; "journal publishing"; "scientific journals"; "Sri Lanka"; "challenges"; "issues"; "problems."

However, the above search retrieved only very few articles relevant to the study as follows: Ranasinghe, Perera, and Abeygunasekara (2011); Yapa (2011); Amarasuriya (1991, 1999).

Therefore, authors expanded their literature survey to the other developing regions of the world where the scholarly journal publishing is facing issues that are similar to Sri Lanka. For that, the initial search query was modified and expanded by adding the keywords such as "developing countries" or region's name (i.e., Africa, Latin America).

This extended literature survey retrieved number of relevant research articles and gray literature as follows: Hulagabali (2019); Harris (2018); Johnson (2018); Mishra and Neupane (2018); Ciocca and Delgado (2017); Costa and Leite (2016); Irfanullah (2016); Nobes (2016); Cage, Smart, and Cumming (2015); Murray and Clobridge (2014); Fischman, Alperin, and Willinsky (2010).

The second objective of the study was to identify the open access initiatives in Sri Lanka with special reference to open access journals. Authors conducted a literature search by using the following keywords and keyword phrases interchangeably: "open access"; "open access journals"; "open access initiatives"; "Sri Lanka"; "Sri Lankan."

The above search retrieved a number of relevant studies and documents as follows: Mashroofa and Seneviratne (2016); Mashroofa (2016); Karunarathne (2013); Perera (2013a, 2013b); Yapa (2011).

A preliminary reading of the selected texts above allowed the identification

JOEMLS English Summary

of citations from other relevant works. Findings of the literature survey were summarized and presented according to the research objectives.

Secondly, quantitative analysis was used to identify the characteristics of open access journals published in Sri Lanka. Secondary sources such as local and international online directories, indexing services and aggregators that provide authoritative lists of open access journals were mainly used to identify the open access journals published in Sri Lanka. They are as follows:

1. Sri Lanka Journals Online (SLJOL) is a database of open access scholarly journals published in Sri Lanka covering the full range of academic disciplines. There were eighty-one (81) journals listed alphabetically in SLJOL as of 21st December 2018.

2. The Directory of Open Access Scholarly Resources (ROAD) is a service offered by the ISSN International Center that provides free access to the ISSN bibliographic records of open access scholarly resources including open access journals (Directory of Open Access Scholarly Resources, 2019). ROAD was searched as follows: ROAD Homepage (http://road.issn.org) → Advanced search → Country → Sri Lanka. Accordingly, there were eight (8) Sri Lankan open access journals listed in ROAD as of 21st December 2018.

3. Directory of Open Access Journals (DOAJ) is an online directory that indexes and provides access to over 12,000 open access journals covering all subject areas (Directory of Open Access Journals, 2019). DOAJ was searched as follows: DOAJ Homepage (http://doaj.org) → Advanced Search → Journals → Country of Publisher → Sri Lanka. Accordingly, there were thirteen (13) Sri Lankan open access journals listed in DOAJ as of 21st December 2018.

Journals identified through the above sources were listed alphabetically and checked for duplication. Accordingly, 84 unique titles were identified as open access journals published in Sri Lanka. A web survey was conducted to collect data manually by accessing journal homepages through the links provided by the above secondary sources. Following data were collected from each journal home page: Journal name (title); Publisher; Subject Content; Publication frequency; Full-text availability; Language; Print version availability; Open access policy; Peer reviewing process; Copyright policy; and, Indexing. Secondary sources such as DOAJ and ROAD provided most of the above data in their bibliographic records. In such cases, those data were verified by accessing the individual journal home page.

Identification of the subject content of the journals was also associated with the data collection step. In DOAJ, journals are categorized using a subset of the "LCC subject categories" (Library of Congress Classification). In addition, "publisher's keywords" are also given under each entry of the journal. However,

JoEMLS English Summary

ROAD does not follow a consistent subject categorization, and uses both DDC (Dewey Decimal Classification) and UDC (Universal Decimal Classification) class numbers concurrently, along with subject names. On the other hand, SLJOL does not use a subject categorization at all and simply arranges the open access journals alphabetically. In that case, the subject content of each journal was determined by accessing each journal's homepage. Since there was no consistency in the subject categorization of journals among above three (3) services, authors decided to use the LCC based subject categorization used by DOAJ as the basis of their subject categorization of Sri Lankan open access journals. Originally, there were twenty (20) subject categories[1] used in DOAJ ranging from "Architecture" to "Technology". Most of the subject category names were used as it is, i.e., Agriculture, Medicine, Science, Technology, etc. In some cases, subject category names were modified, i.e., "Bibliography. Library science. Information resources" was adapted as "Library and Information Science". In some cases, the second level of the subject tree was used to better represent the subject content of the journals, i.e., "Fine Arts: Architecture" was used as "Architecture" and "Geography: Environmental Sciences" was used as "Environmental Sciences". On the other hand, the category named "Multidisciplinary" was newly added by authors to represent the multidisciplinary nature of several open access journals. Altogether, the study identified nine (9) subject categories as represented in Table 1.

JoLMLS English Summary

Table 1 Subject Distributions of Sri Lankan OA Journals

Subject category	No. of OA journals	Percentage
Medicine	30	35.71
Social Sciences	15	17.85
Agriculture	12	14.28
Science	11	13.09
Multidisciplinary	6	7.14
Technology	4	4.76
Architecture	3	3.57
Library and Information Science	2	2.38
Environmental Sciences	1	1.19
Total	84	100

Source: Compiled by authors.

Data collection was carried out during the first three (3) weeks of December 2018. Collected data were transferred into an MS Excel Spreadsheet and the descriptive statistical methods were used to analyze and interpret data and the findings were presented through tables, charts, and graphs.

Research methods and materials selected for the present study have several limitations as follows. Authors had to solely depend only on the literature

[1] https://doaj.org/subjects.

review to identify the problems associated with scholarly journal publishing in Sri Lanka. Primary survey or interview methods could not be used in this study due to various constraints such as time and space. On the other hand, lack of a comprehensive list of open access journals published in the country resulted in authors having to limit their journal search to the aforementioned secondary sources. Thus, there is a possibility of inadvertently non-identifying certain open access journals.

Findings and Discussion

Problems Faced by Sri Lanka and Other Developing Countries in Scholarly Journal Publishing

Sri Lanka is an island located in the Indian Ocean with a total land area of 65,000 km^2 and a population of 22 million. Sri Lankan higher education system consists of fifteen (15) national universities, three (3) campuses and eighteen (18) affiliated institutes including eight (8) post-graduate institutes coming under the authority of University Grants Commission (UGC), Sri Lanka. In addition, there are five (5) public non-UGC universities in Sri Lanka. Also, there are nearly thirty (30) research institutes in Sri Lanka. Scholarly publishing in Sri Lanka dates as far back as the 19th century. Progress in scholarly publishing was closely related to the historical development of learned societies in the country (Yapa, 2011). *The Journal of the Ceylon Branch of the Royal Asiatic Society* is the first scholarly journal of the country which was published in 1845. The first scientific journal to be published in Sri Lanka was the *Medical Miscellany*, founded in 1853 (Senadhira, 1975). *The Journal of the Ceylon Branch of the British Medical Association* (forerunner to The Ceylon Medical Journal), founded in 1887, is the oldest surviving medical journal in Australasia.

ICEMLS English Summary

According to Yapa (2011), there was a significant increase in the publication of scholarly journals in Sri Lanka from 1970 onward. As of 2010, there were one hundred fourteen (114) print scholarly journals published in Sri Lanka and the highest number (34%) of them were humanities and social sciences related, followed by medical related (28%) and natural and physical sciences related (24%) journals. The majority of these scholarly journals were published by universities, professional associations and research institutes in Sri Lanka and virtually there were no commercial publishers engaged in scholarly journal publishing in the country.

The literature survey has revealed a number of studies that discuss the key issues faced by the scholarly journal publishing industry in developing countries including Sri Lanka. Scholars such as Hulagabali (2019), Irfanullah (2016), and Cage et al. (2015) discuss the issues associated with scholarly journal publishing in South Asian nations. While Johnson (2018) discusses the challenges faced

by scholarly journals in the Arab world, Murray and Clobridge's (2014) report focuses on the key issues faced by African scholarly journals. Studies carried out by Ciocca and Delgado (2017), Costa and Leite (2016) and Fischman et al. (2010) provide an insight into the situation of scholarly journal publishing in Latin America. Harris (2018), Mishra and Neupane (2018), and Nobes (2016) discuss the issues related to scholarly journal publishing in developing countries in general. Few studies (Amarasuriya, 1991, 1999; Ranasinghe et al., 2011) discuss the issues faced by scholarly journal publishing in Sri Lanka. Common issues faced by developing countries including Sri Lanka in scholarly journal publishing can be summarized as follows.

Researcher's preference of journal is dependent on the quality of a journal, especially on whether they are indexed in key databases. Academic and research institutes in developing countries prefer publishing in international journals over local journals and giver more credit to them. According to Murray and Clobridge (2014), African universities' promotion policies reward authors for publishing in overseas, high impact factor journals. Therefore developing country researchers being driven to publish their works in indexed journals with high impact factor. The number of submissions to local journals is decreasing, and the number of papers published in local journals is also decreasing as a result of it (Mishra & Neupane, 2018). Irfanullah (2016) says, getting quality manuscripts remains one of the biggest challenges for most of the journals published in Bangladesh. He further says the manuscript quality has to be severely compromised to publish an issue on time, leading to a sub-standard journal. Discussing the problems associated with medical journal publishing in Sri Lanka, Ranasinghe et al. (2011) say that most locally published journals are lack of high-quality articles and are not visible to the rest of the world. According to Amarasuriya (1991), local journals face a limited supply of suitable articles because local academic and research institutes prefer publications in international journals over local journals and give more credit to them.

On the other hand, lack of submissions causes the irregularity of publication leading very few journals from developing countries to be indexed in key databases. Studies have found that very few journals from developing countries are indexed in key databases such as PubMed, Scopus or Web of Science (Nobes, 2016), despite the efforts of editors to improve the quality of their journals. They further identify the struggle of local scholarly journals to consistently attract quality submissions per annum. It results in inconsistency in the journal's publication and creates a vicious cycle of being not indexed in key databases. As Fischman et al. (2010) say, the regularity of the publishing cycle is one measure of quality assessed by indexes such as ISI Web of Science. The rise of predatory

JoE/IS English Summary

journals[2] (also called as pseudo-journals), which exploit the above situation, has created further challenges to journals based in developing countries. According to Nobes (2016, p. 26) "many unsuspecting researchers have lost valuable research to questionable, non-peer reviewed journals that are unlikely to be read and used." In his interview with Hulagabali (2019), Jeffery Beall says that "South Asia has a world reputation for being a center of predatory publishing." This unacceptable scholarly practice has badly affected the reputation of scholarly journals published in developing countries. Nobes says:

> ... this has led some journals to seek alternative indexing and metrics to prove their worth, and so open themselves up to exploitation from yet another "predatory" player on the market — fake indices and metrics that charge journals for the privilege of their dubious impact factor. (Nobes, 2016, p. 29)

Lack of funds is another issue which affects the scholarly journal publishing in developing regions. According to Harris (2018), lack of funding or resources is among many challenges faced by journal publishing in the Global South. Murray and Clobridge (2014) reports that nearly one-third of journals in Africa operate in a cashless environment. Without any income or revenue, instead, they rely on volunteers and in-kind support from institutions. According to Cage et al. (2015), journal publishing in Bangladesh incurs significant expenses for printing, followed by graphic design, typesetting, and page layout, mailing and distribution as well as for managing editorial offices. Nobes (2016) reports that more than half of the Bangladesh journals run without any financial assistance at all. Most of the journals in developing countries are published by publicly funded non-profit organizations (such as universities, research institutes) or by learned societies. According to Murray and Clobridge (2014), the majority of African journals are published by a group based out of a university, scholarly society, or professional association. According to Fischman et al. (2010), in Latin America, universities are the largest single owners of the journals and in terms of funding, more than half of these journals are entirely funded by universities. They further say that journals are not treated by scholarly society or commercial publishers as a means of creating profit, and the journals that have experienced pauses in publishing, over one-third have cited financial constraints as the reason for that. According to Johnson (2018), financial strengths and weaknesses of these institutions and organizations determine not only the frequency of the journal's

JOEMLS English Summary

[2] Predatory journal (definition): "online journals characterized as 'predatory', which actively solicit manuscripts and charge publications fees without providing robust peer review and editorial services." (Shamseer et al. 2017).

publication but also how consistently copies of issues are distributed. Researchers have also found that scholarly journal publishing in developing countries does not have large commercial publishers such as those in North American and European countries (Costa & Leite, 2016; Murray & Clobridge, 2014) while some studies report the complete absence of commercially published titles (Fischman et al., 2010). Ciocca and Delgado (2017) point out another indirect impact of the lack of funds on scholarly publishing as follows. According to them, Latin American scientists prefer to publish their discoveries in journals that do not charge for publication costs since it is very difficult to pay those charges from their modest research grants. Very often these journals are the ones with lower impact factors, which negatively affect the ratings and the visibility of scientific research output. When it comes to financial constraints, Sri Lanka also has no exception in this regard. Studies have found that local journals face lack of funds to continue publishing and even publishing a single issue of a journal incurs a significant cost to the publisher (Ranasinghe et al., 2011). Main sources of funding for Sri Lankan journals are not subscribers, but advertisers, donors and societies/institutes. As a result, the continuance of these journals may be affected by local or global economic conditions. Amarasuriya (1999) found that most of the local journals are vulnerable to be irregular and ceased publication after a short time. According to her, most of the journal publishers are publicly funded non-profit organizations, and they do not publish journals for profit making. As a result, these scholarly journals become less competitive and less sustainable. As a consequence, most of the research output in developing nations become less visible and accessible, resulting in less acknowledgment and citations by the scholarly world. This continues as a vicious cycle for researchers and scholarly journal publishing industry in developing countries.

JoLMIS English Summary

Finally, studies report that the scholarly journals in developing countries face numerous issues related to the management of their journals including lack of trained, dedicated, full-time editors and other staff. According to Fischman et al. (2010), administrative or editorial issues and human resource shortages were commonly cited as one of the reasons for discontinuing titles in Latin America. Finding good peer reviewers to evaluate the articles remains a consistent challenge for editors. The study further says issues related to the day-to-day operation of the journals prevent Latin American publications from reaching full maturity. Irfanullah (2016) says the supply of editors and reviewers has become less than the demand. He further says a significant number of individuals could be seen engaged with several journals with overlapping scopes. Such individuals often become overburdened, the editorial and reviewing process becomes slower, even if the supply of manuscripts is healthy. Murray and Clobridge (2014) also

mentions finding good peer reviewers as a constraint that African journals faced. According to Harris (2018), many Global South journals are set up, managed and edited by practicing academics who are doing publishing tasks in their spare time. Amarasuriya (1991, 1999) identifies that the same problems are faced by Sri Lankan scholarly journal publishing as well. She says that journals published in Sri Lanka face the shortage of professionally-qualified editors, inadequate refereeing and lack of adherence to internationally accepted standards and norms of scholarly publishing. Lack of qualified and dedicated human resources to manage journals also results delays in printing, poor circulation, distribution, and marketing of local journals.

Open Access as an Opportunity for Scholarly Journal Publishing in Developing Countries

A number of studies have identified that open access as a great opportunity for scholarly journals published in developing regions to overcome the above challenges. Suber observes that researchers in the Global South are among the most determined advocates for open access (Poynder, 2013). Schöpfel says:

> …they [researchers in the Global South] want it [open access] not only as readers, to have access to international research, but also as authors so that their own work can be known to colleagues elsewhere. Open access is not only access and consumption but also and above all, production and dissemination. (Schöpfel, 2017)

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This situation is well represented in the world's largest open access journals directory, DOAJ, which indexes open access journals published in the world. According to DOAJ statistics, Indonesia (1,404 journals) and Brazil (1,321 journals) occupy the second and third ranks respectively as far as the number of open access journals published by different countries is concerned (as of February 22nd, 2019).

According to Harris (2018), open access offers a chance to journals in the developing world, those who face challenges in becoming known and respected in the international research landscape, to make them visible. Johnson (2018) identifies open access can contribute to solving the problem of journal distribution. Nassi-Calò (2016) says that open access has led to the elimination of the print version of most journals, greatly reducing the costs of publication. In a study based on five emerging countries called BRICS—Brazil, Russia, India, China, and South Africa, Schöpfel (2017) identifies that open access is great in the developing world as it can contribute to solving problems related to access gaps.

Studies have recommended open access as a solution to the problems faced by scholarly journal publishing in Sri Lanka. Mashroofa (2016) proposes

that Sri Lankan scientists must adopt open access for scholarly communication practices to maximize visibility and to earn high impact for their research. She also encourages funding agencies, universities and research institutes to formulate open access policies, establish institutional repositories, and motivate researchers to publish in open access journals and archive in digital repositories. Mashroofa and Seneviratne (2016) recommend the institutions to formulate their own open access policy and make open access mandatory in order to maximize the openness of scholarly output.

Some other studies have found that there is a welcoming environment for open access in Sri Lanka. Perera (2013a) focused on Sri Lankan academics' and researchers' attitudes and awareness on open access reports that eighty-four percent (84%) of Sri Lankan academics and researchers are aware of open access, sixty-nine percent (69%) of them use open access articles for their research and forty percent (40%) of academics and researchers actively publish their research work in open access journals and/or repositories. Study further reports that senior researchers are more positive towards open access than juniors. Karunarathne (2013) reports the results of a case study where a local journal, *Journal of the National Science Foundation*, shifted from delayed open access to immediate open access in June 2013. According to her, the journal has experienced exponential growth in terms of downloads of articles as well as submissions from international authors.

Holdom (2005) argues that the lack of a commercial publishing industry in Latin America has stimulated the growth of online publishing initiatives in the region. Costa and Leite also express the same view by saying that

> …this is because journals are traditionally free in the region, not having large commercial publishers such as those in North American and European countries. Thus, for Latin America, the advent of information technology and open access initiatives means a chance to establish the necessary infrastructure to expand the dissemination of scientific production as it has never focused on profit. (Costa & Leite, 2016, p. 34)

Scholars from Sri Lanka also have the same view. Ranasinghe et al. (2011) identify several good qualities of (medical) journal publishing in Sri Lanka including free access to articles, minimum charges for authors and potential for online availability. These authors suggest that Sri Lankan (medical) journals should shift from the traditional publishing model to online publishing models with a minimum number of printed copies. Yapa (2011) identifies the introduction of online open access publications as an opportunity to make Sri Lankan scholarly

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journals freely available to anyone, resulting in greater accessibility and visibility to local research. Lack of profit-making intentions of local journal publishers is seen as potential support for such efforts (Yapa, 2011).

Open Access Journal Publishing in Sri Lanka

Although the scholarly journal publishing has a long history, open access journals are relatively a new concept for Sri Lanka. The National Science Foundation (NSF), with the mandate to serve and strengthen the science and technology sectors in the country, has played a key role in open access movement in Sri Lanka. First open access repository was established by NSF in 2006 and the number has increased up to thirty-one (31) repositories since then (Search Sri Lankan Institutional Repositories, 2019). These include institutional repositories of research institutes, national universities and the NSF of Sri Lanka. NSF actively supported the establishment of these open access repositories as a part of the National Digitization Project (Perera, 2013b).

International Network for the Availability of Scientific Publications (INASP) was instrumental in introducing open access journals in Sri Lanka. Collaboration between the INASP and developing country libraries and journals led to the creation of the journals online (JOL) platform that help local journals in Asia, Africa, and Latin America to gain greater visibility and reach to local as well as international audiences (Mishra & Neupane, 2018). In other words, the JOL project of INASP aimed to improve the accessibility and visibility of developing country research. It used the Open Journals System (OJS), open source software created by the Public Knowledge Project (PKP). INASP believes that local journals play an important role in communicating Southern research. Through the JOL Project, INASP has helped to develop a number of online open access platforms, beginning in 1998 with the African Journals Online (AJOL) platform. In addition, INASP has set up The Central America Journals Online (CAMJOL) which hosts journals primarily appeared in Spanish. CAMJOL was originally called the Latin American Journals Online (LAMJOL). In Asia, Bangladesh Journals Online (BanglaJOL), Nepal Journals Online (NepJOL), and Sri Lankan Journals Online (SLJOL, see Figure 1) have continued to grow and around ninety-five percent (95%) of articles are full-text open access (Nobes, 2016).

It has been ten years since first open access journals were launched in Sri Lanka. SLJOL project was initiated in 2008 with the support of INASP. SLJOL is a database of scholarly journals published in Sri Lanka, covering the full range of academic disciplines. Managed by the NSF of Sri Lanka, the objective of SLJOL is to give greater visibility to the participating journals, and to the research they convey. Since the year 2015, a new SLJOL website was launched in collaboration with Ubiquity Press.

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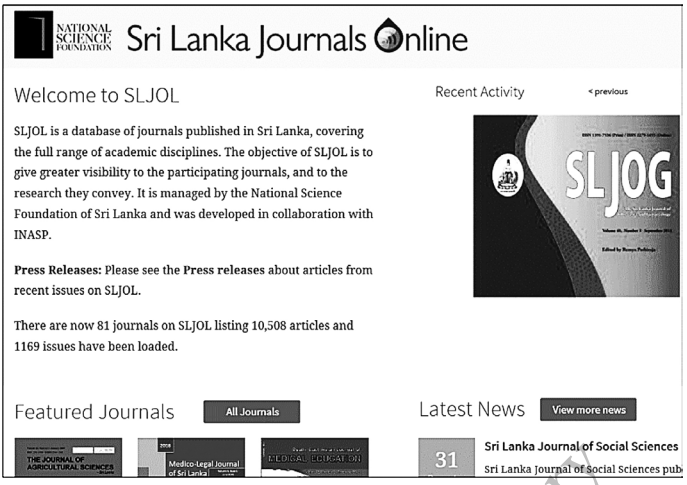

Figure 1 SLJOL Homepage

Source: Sri Lanka Journals Online (2019a).

Journals are selected for inclusion on SLJOL using the following criteria:

1. Journals are scholarly in content and contain original research.
2. Journal papers are peer-reviewed and quality controlled.
3. Journals should provide all content (tables of contents, abstracts, and PDFs of full-text) in electronic format.
4. Journals should be published within Sri Lanka (Sri Lanka Journals Online, 2019b).

So far, 81 scholarly journals have been hosted on SLJOL and have provided access to the table of contents, abstracts, and full-text of over ten thousand (10,000) articles via the Internet.

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Characteristics of Open Access Journals Published in Sri Lanka

A quantitative web survey was carried out to identify the characteristics of open access journals published in Sri Lanka. Secondary sources, mainly DOAJ, ROAD and SLJOL were used to identify the open access journals published in Sri Lanka. Eighty-four (84) open access journals identified through the above sources were evaluated to identify their characteristics and the findings are presented and discussed here.

Overall subject distributions of Sri Lankan open access journals are displayed in Table 1. According to available data, science and technology field dominates the open access journal publishing in Sri Lanka as the majority of journals (67.84%, n = 57) fall under that category. Among the science and technology journals (57 journals in total), most of them (52.63%; n = 30) are medicine related, followed by agriculture (21.05%, n = 12) and natural and physical science (19.29%, n = 11) journals. However, these findings are in

contrast to the findings of Yapa (2011) who revealed that the highest number of print journals published in Sri Lanka were humanities and social sciences related. These findings confirm that while humanities and social sciences related journals dominate the traditional print journal publishing industry, science and technology related journals dominate the open access journal publishing in the country.

Academic institutes and professional associations are the major publishers of open access journals in Sri Lanka (Figure 2). They occupy eighty-eight percent (88%, n = 74) of open access journals published in the country. Here, academic institutes incorporate universities and other higher education institutes. Professional associations (societies), also known as learned societies, publish journals related to their academic disciplines or professions. A small percentage of journals is published by research institutes, government departments, and non-governmental organizations. It is interesting to note that virtually there are no commercial publishers engaged in open access journal publishing in Sri Lanka. These findings tally with previous studies (Yapa, 2011) which identified academic institutes, professional organizations and learned societies as the major contributors of scholarly journal publishing in Sri Lanka.

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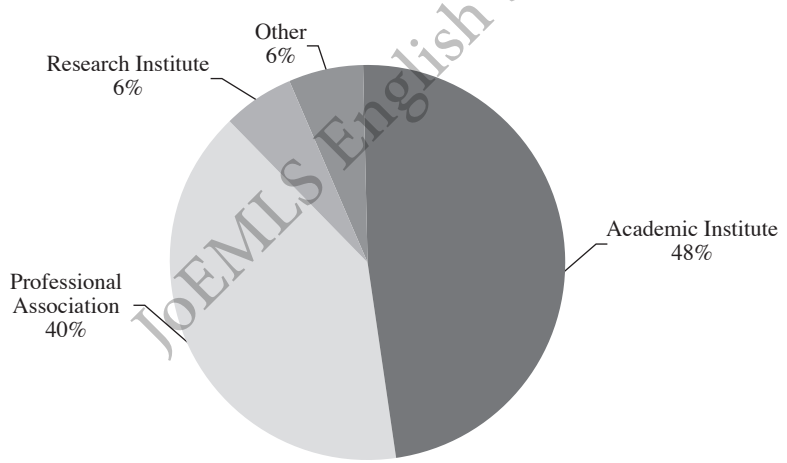

Figure 2 Sri Lankan OA Journal Publishers

Table 2 offers an overview of the publisher-wise distribution of open access journals. Accordingly, the highest number of medical journals (80%, n = 24) are published by professional associations. Another few titles (13.33%, n = 4) are published by academic institutes. The vast majority of (80%, n = 12) social sciences journals are published by academic institutes. More than half of (63.63%, n = 7) natural and physical science journals are published by academic institutes. Half of the agriculture and social sciences related journals are also published by academic institutes. In this way, professional associations in Sri Lanka publish

Table 2 Publisher-wise Distribution of OA Journals

Subject category	Publisher-wise distribution of OA journals	
	Publisher	*N* (%)
Medicine (30 Journals)	Academic Institute	4 (13.33)
	Professional Association	24 (80)
	Other	2 (6.66)
Social Sciences (15 journals)	Academic Institute	12 (80)
	Research Institute	1 (6.66)
	Other	2 (13.33)
Agriculture (12 Journals)	Academic Institute	6 (50)
	Professional Association	3 (25)
	Research Institute	3 (25)
Science (11 Journals)	Academic Institute	7 (63.63)
	Professional Association	2 (18.18)
	Research Institute	1 (9.09)
	Other	1 (9.09)
Multidisciplinary (6 journals)	Academic Institute	5 (80)
	Professional Association	1 (20)
Technology (4 journals)	Academic Institute	2 (50)
	Professional Association	2 (50)
Architecture (3 journals)	Academic Institute	2 (66.6)
	Professional Association	1 (33.33)
Library and Information Science (2 journals)	Academic Institute	1 (50)
	Professional Association	1 (50)
Environmental Sciences (1 journal)	Academic Institute	1 (100)

Source: Compiled by authors.

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more open access journals on medicine while academic institutes publish more open access journals on other subject areas.

As far as the frequency of open access journals published in Sri Lanka (Table 3) is considered, sixty-three percent (63.09%, n = 53) of them are published biannually. Fourteen percent (14.28%, n = 12) of journals publish only a single issue per year (annually). Only twelve percent (12%, n = 10) of open access journals are published quarterly. The subject-wise analysis reveals that more than half of the medical journals (56.66%, n = 17) are published biannually, whereas only sixteen percent (16.66%, n = 5) of medical journals are published quarterly. Another sixteen percent (16.66%, n = 5) of medical journals publish only a single issue per year. The vast majority of (80%, n = 12) of social sciences journals are published biannually. Forty-one percent (41.66%, n = 5) of agriculture journals are published biannually, whereas another twenty-five percent (25%, n = 3) are published annually. The majority (54.54%, n = 6) of natural and physical science journals are also biannual publications.

Table 4 summarizes the findings related to the article processing charges (if any), immediate open access to the articles published, copyright policy, peer

Table 3 Frequency of OA Journals Published in Sri Lanka

Subject category	Frequency of publication	
	Frequency	*N* (%)
Medicine (30 Journals)	Annual	5 (16.66)
	Biannual	17 (56.66)
	Continuously published online	1 (3.33)
	No information	2 (6.66)
	Quarterly	5 (16.66)
Social Sciences (15 journals)	Annual	2 (13.33)
	Biannual	12 (80)
	No information	1 (6.66)
Agriculture (12 Journals)	Annual	3 (25)
	Biannual	5 (41.66)
	Every two (2) years	1 (8.33)
	Three (3) issues per year	1 (8.33)
	Quarterly	1 (8.33)
	No information	1 (8.33)
Science (11 Journals)	Annual	3 (27.27)
	Biannual	6 (54.54)
	Quarterly	2 (18.18)
Multidisciplinary (6 journals)	Biannual	4 (66.66)
	Quarterly	1 (16.66)
	Three (3) issues per year	1 (16.66)
Technology (4 journals)	Biannual	3 (75)
	Quarterly	1 (25)
Architecture (3 journals)	Biannual	3 (100)
Library and Information Science (2 journals)	Biannual	2 (100)
Environmental Sciences (1 journal)	Biannual	1 (100)

Source: Compiled by authors.

Table 4 Other Characteristics of OA Journals Published in Sri Lanka

Article Processing Charges (APC)			
APC available *N* (%)	APC not available *N* (%)	No information *N* (%)	Total *N* (%)
3 (3.57)	79 (94.04)	2 (2.38)	84 (100)
Immediate vs. Delayed Open Access			
Immediate OA *N* (%)	Delayed OA *N* (%)	No information *N* (%)	Total *N* (%)
79 (94.04)	—	5 (5.95)	84 (100)
Journal's Copyright Policy			
Pub. retains copyright *N* (%)	Author retains copyright *N* (%)	No information *N* (%)	Total *N* (%)
35 (41.66)	34 (40.47)	15 (17.85)	84 (100)
Peer-Review Process			
Peer-reviewed *N* (%)	Partially peer-reviewed *N* (%)	No information *N* (%)	Total *N* (%)
80 (95.23)	4 (4.76)	—	84 (100)
Language of Publication			
English articles only *N* (%)	Trilingual *N* (%)	No information *N* (%)	Total *N* (%)
81 (96.42)	3 (3.57)	—	84 (100)

Source: Compiled by authors.

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review process and language of publication of Sri Lankan open access journals. According to the findings, only very few journals (3.57%, *n* = 3) charge any article processing fee from authors as they are operated with non-profit motives of their publishing institutes. At the same time, almost all the journals (94.04%, *n* = 79) offer immediate open access to full-text of articles without any delay. In many cases, publishers retain the copyright of the works published in their journals (41.66%, *n* = 35) and authors are required to get the permission from the journal editor or publisher to reproduce their work. An almost equal amount of journals (40.47%, *n* = 34) allow authors to retain the copyright of their works through Creative Commons licenses. Study findings further revealed that all the open access journals published in Sri Lanka undergo some form of peer review. Some journals (4.76%, *n* = 4) peer review the articles only submitted to the peer review section of the journal. Almost all the open access journals published in Sri Lanka (96.42%, *n* = 81) accept articles only written in English, while only very few journals accept articles written in local languages (Sinhalese and Tamil language) in addition to English language articles.

Among the indexes, directories and aggregators that cover open access journals published in Sri Lanka, the most cited aggregator is SLJOL, out of eighty-four (84) open access journals, eighty-one (81) journals (96.42%) were part of SLJOL (Table 5). The next most frequently cited were DOAJ (15.47%, *n* = 13), ROAD (9.52%, *n* = 8), Scopus (5.95%, *n* = 5), CAB Abstracts (2.38%, *n* = 2)

Table 5 Indexing and Abstracting Services That Cover Sri Lankan OA Journals

Indexing/Abstracting service	No. of OA journals	Percentage
SLJOL	81	96.42
DOAJ	13	15.47
ROAD	8	9.52
SCOPUS	5	5.95
CAB Abstracts	2	2.38
Global Health	2	2.38
Medline	1	1.19
EBSCO	1	1.19
SCIE	1	1.19
Chemical Abstracts	1	1.19
TEEAL	1	1.19
Ulrich's	1	1.19
Agricola	1	1.19
Biological Abstracts	1	1.19
Zoological Abstracts	1	1.19
BIOSIS Previews	1	1.19
ESCI	1	1.19
CIRAD	1	1.19

Source: Compiled by authors.

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and Global Health (2.38%, *n* = 2) respectively. In addition to that, a single journal is indexed in each of the following indexing services: Medline, EBSCO, SCIE, Chemical Abstracts, TEEL, Ulrich's, Agricola, Biological Abstracts, Zoological Abstracts, BIOSIS Previews, ESCI, and CIRAD.[3]

As far as the search engine visibility is concerned, almost all the journals (97.61%, *n* = 82) are within top five entries on the first page of the search results on "Google" and "Yahoo!" Search engines (Note: Journal title in phrase search was used as the search technique). Only very few journal names (2.38%, *n* = 2) were confused with another journal.

Conclusions and Recommendations

Findings have indicated that the overwhelming majority of Sri Lankan open access journals are published either biannually or annually. The frequency of publication is closely associated with print counterparts of these journals. Usually, print and online versions of a journal issue are published simultaneously. However, online publishing platforms enable a journal to be published as a continuous volume and issue throughout the year irrespective of the frequency of the print counterpart. Already there are such initiatives by certain open access journals such as "Sri Lanka Journal of Radiology" which publishes as a continuous volume and issue throughout the year. Known as "continuous publication model", this enables articles to be made available as soon as they are ready to be published, without any unnecessary delays. We recommend the other open access journals also to move into this model to enable the rapid dissemination of research findings, rather than confined into the conventional model that publishes issues at fixed intervals.

Study findings revealed that only a few of Sri Lankan open access journals are covered by international indexing and abstracting services. Since local journals are the sources of indigenous knowledge, wide coverage of them in international indexing and abstracting services will provide credit and acknowledgment for local research findings in the international arena. Therefore, it is necessary for Sri Lankan open access journals to be adhered to international standards of scholarly journal publishing to ensure that they are covered by international indexing and abstracting services including DOAJ.

It was reported that virtually none of the open access journals published in Sri Lanka charge any article processing fee from authors. This is due to the non-profit motives of journal publishers in Sri Lanka. Although this can be considered as a favorable situation for Sri Lanka's scholarly publishing, it is worthwhile to

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[3] Several journals are indexed in more than one indexing service, i.e., *Ceylon Medical Journal*, *Journal of the National Science Foundation of Sri Lanka*.

note that open access is not for free. Even though it has to be freely accessible to the end users, somebody has to bear at least the essential costs associated with publishing an open access journal. So far these journals are being continued with institutional funding or support from generous donors. In the absence of such funding sources, open access journals published in Sri Lanka are vulnerable to be discontinued. Because the other alternatives such as author paid model of open access, used in developed countries, won't work well in the Sri Lankan context. Therefore, securing regular financial support from the government of Sri Lanka is necessary for the sustainability of open access journals published in the country.

On the other hand, research works that are financially supported by the public universities and research institutes should be encouraged to publish in open access journals. Moreover, these universities and research institutes shall establish and/or strengthen their open access policies to mandate the deposit of either pre-print or post-print versions of the journal articles produced by their institutional members in its open access institutional repository. Otherwise, if the present open access journals hosting and/or supporting services come to a standstill or if these services decide to shift into profit-making business models in the future, these academic and research institutes will lose the access and control over the works produced by their members and/or works funded by them. In such instances, institutional repositories could serve as substitutes for open access journals.

At the same time, there is a need for introducing standards and policies to regulate and quality control the open access journals published in the country. It will ultimately contribute to minimizing the risk of emergence of predatory open access journals within Sri Lanka. At the same time the awareness on predatory journals, fake indices and metrics should be enhanced among academics and researchers to avoid them from being the victims of such bogus services. Academic institutes and professional associations, as well as libraries and librarians, have a big responsibility in this regard.

Although the previous studies have revealed that most of the print journals published in Sri Lanka are related to humanities and social sciences, the present study observed that open access journal titles related to humanities and social sciences are very few. Usually, in Sri Lanka, most of the humanities and social sciences journals are published in local languages. Non-availability of these journals on open access platforms hinder the research output appeared in local languages. Therefore, it is necessary to support these journals to have an online presence through open access platforms. It will particularly enable the indigenous knowledge to be available to the global readership.

At the same time, capacity building among open access journal editors, reviewers, and the other staff is necessary to improve the quality and the

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standards of open access journals published in Sri Lanka. On the other hand, authors must be trained on how to produce quality manuscripts. At the same time, any misconceptions about open access publishing among the authors must be eliminated by enhancing their awareness on the importance of open access publishing. Further, awareness of open access among the policymakers and the high-level management in the institutions as well as in the government should be enhanced in order to get their support for the sustainability of open access initiatives.

In view of this, if properly planned, Sri Lankan scholarly journals are in a favorable position to ripe the benefits of open access scholarly publishing. Adherence to international standards in journal publishing, securing constant financial support, formulating open access policies at institutional and national levels, raising the awareness on the importance of open access among relevant bodies as well as capacity building among key stakeholders would ensure the realization of those benefits. However, access to the latest research output that appears in internationally reputed journals would still be retained as a challenge for Sri Lankan academic and research community due to escalating journal prices and decreasing library budgets.

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   林信成、陳瑩潔、游忠諺，「Wiki協作系統應用於數位典藏之內容加值與知識匯集」，教育資料與圖書館學 43卷，3期（2006）：285-307。【Sinn-Cheng Lin, Ying-Chieh Chen, and Chung-Yen Yu, "Application of Wiki Collaboration System for Value Adding and Knowledge Aggregation in a Digital Archive Project," *Journal of Educational Media & Library Sciences 43*, no. 3 (2006): 285-307. (in Chinese)】
   範例2 －參考文獻（References）
   林雯瑤、邱炯友（2012）。教育資料與圖書館學四十年之書目計量分析。教育資料與圖書館學，*49*（3），297-314。【Lin, Wen-Yau Cathy, & Chiu, Jeong-Yeou (2012) A bibliometric study of the *Journal of Educational Media & Library Sciences,* 1970-2010. *Journal of Educational Media & Library Sciences*, *49*(3), 297-314. (in Chinese)】

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