

JoEMLS

DOI:10.6120/JoEMLS

CODEN: CYTHD5 ISSN 1013-090X

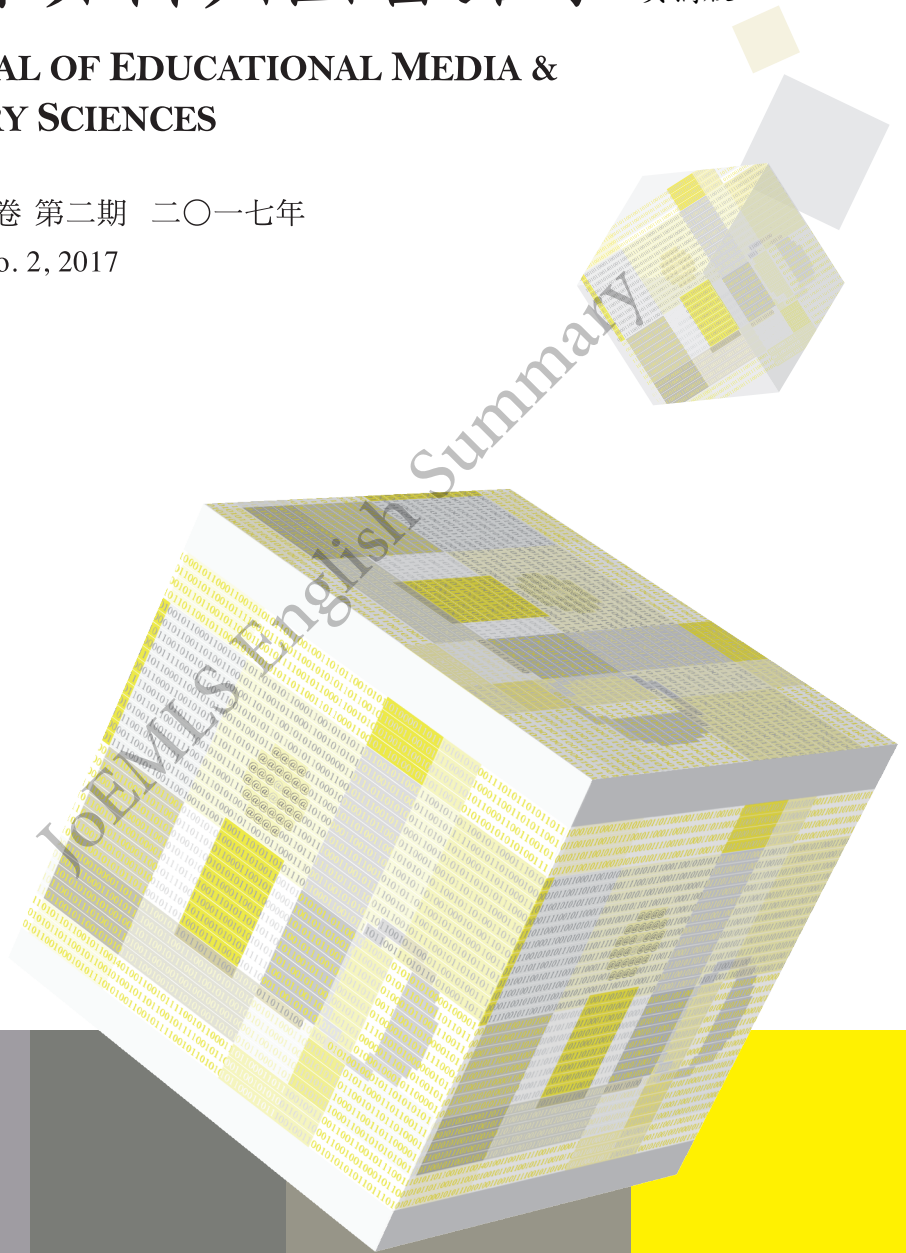
教育資料與圖書館學

英摘版

JOURNAL OF EDUCATIONAL MEDIA &
LIBRARY SCIENCES

第五十四卷 第二期 二〇一七年

Vol. 54, No. 2, 2017



教育資料與圖書館學

JOURNAL OF EDUCATIONAL MEDIA & LIBRARY SCIENCES

Vol. 54, No. 2, 2017

淡江大學出版中心



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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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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- (3) 任何稿件之典藏版本皆須註明其與 *JoEMLS* 之關係或出版後之卷期出處。

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 online 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

In and Beyond This Issue

The year of 1665, in which *Journal des Sçavans* was published in France and *Philosophical Transactions* in England, has been deemed as the beginning of academic journals. The publishing format changed from books to journals, which could be claimed as the first revolution in academic publishing. In 1990s, with the rapid development of Internet, publishing agencies began to publish journals in digital format. These electronic journals not only changed reading behaviors of academic community members, but also dramatically enhanced effects and efficiencies of scholarly communication. This phenomenon could certainly be viewed as the second revolution in academic publishing. In recent years in academic fields, both individuals and institutions have been under the enormous pressure resulted from the rising prices of academic journals. At this time, one possible option for fighting the high expenses of subscribing academic journals would be adopting the mechanism of Open Access (OA) for publishing and circulating journals. However, the cost of publishing electronic journals has not been lowered much. There is no such thing as a free lunch, and who will pay the bills for scholarly journals?

JoEMLS has become a member of OA journals. Readers can obtain full texts for free online, and we only charge a small amount from authors for translating and editing English abstracts. For manuscripts written in English, since there is no need for translation, the authors would not be charged for anything. The high expenses of publishing are mainly supported by the publishing units' parent institutions. This is thus a subsidized OA journal. For those journals published by academic societies or business publishers, it tends to be difficult to get subsidized for publishing. Since the concept of OA journal is not charging readers, it is certainly reasonable to charge from authors. Thus, article processing charge, or article publication charge (APC) is the natural outcome. However, how much is the APC? How to collect the fee? Who should pay? These have become issues resulting in challenges and wrestling between scholarly community members and publishers. We also wonder whether the translation of English abstracts and Romantization of citations of *JoEMLS* fall into the range of article publication charges?

From the perspectives of readers and authors, if we expect the OA mechanism of publishing and circulating to be a possible option for fighting against the out-of-control increasing prices of academic journals, we should

not overlook the discussion and even supervision of reasonableness of APCs. From the perspective of journal publisher, if we would like to maintain a steady operation of publishing journals, reasonable computation of APCs and design of fee policy would be an important part of journal management, especially with the diverse developments of business modes of OA journals. Following this logic, all members of scholarly communities should get involved and not exclude from the discussions of this issue; otherwise, readers and authors could only be manipulated by publishing institutions, or publishing institutions will be dominant in defining the future publishing of journals, excluding authors from participation. Furthermore, governments should have responding strategies and policies for managing academic research; otherwise, the OA mechanism of publishing and circulating journals not only will detour from a healthy development, but also might follow the wrong steps of the disastrous business mode of traditional journals in the western. This is our earnest appeal and serious reminding.

In this new issue (Volume 54, Issue 2), four articles are collected. Three are research papers and one is brief communication. The brief communication and one of the research papers are English manuscripts. Sixteen manuscripts are submitted for this issue; 12 manuscripts are rejected, with a rejection rate of 75%. Another ten manuscripts are still at the review stage. The articles published in this issue include “An Unfair Game: The Dilemmas Posed by Academic Research Evaluation to Sociology Monograph Writing in Taiwan” by Tien-Hsin Chang and Chi-Shiou Lin, “A Revenue Analysis on Taiwan’s Publishing Industries from the Prospective of Knowledge Discovery Using Government’s Financial Database” by Ming-Ju Hsu, “Exploring the Factors Influencing Agencies’ Engagement in Open Data: A Case Study of Taichung City Government” by Yang-Chou Lai and Tung-Mou Yang, and “Embracing Ebooks: Acquisition and Collection Development Landscape in Philippine Academic Libraries” by Janice D. C. Peñaflores and Justina Garcia.

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An Unfair Game: The Dilemmas Posed by Academic Research Evaluation to Sociology Monograph Writing in Taiwan

Tien-Hsin Chang^a Chi-Shiou Lin^{b*}

Abstract

Scholarly books, or scholarly monographs, are an important form of research output in humanities and social sciences. However, the current research evaluation practices in Taiwan highly emphasize journal articles and have thereby suppressed the production of scholarly books. This study employed in-depth interviews with 14 Taiwanese sociologists who had written and published scholarly books to understand the problems and challenges facing scholarly monograph production in the contemporary research evaluation culture. Interview topics included the values and contributions of scholarly books to the studies of sociology, the negative influences of journal-focused research evaluations on the sociology discipline, problems and challenges facing book-writing sociologists, and possible solutions to those problems. Based on the findings, the authors discuss on the proposed research review approach that monitors an author's book-writing progress rather than focusing on the end-product, as raised in the interviews, as well as the problems and reliability issues with the pre-publishing anonymous review requirement that has become a mandate for scholarly book publishing in Taiwan.

Keywords: Research evaluation, Scholarly monographs, Scholarly writing and publishing, Sociology in Taiwan

SUMMARY

Scholarly monographs are a major form of research output in social sciences and humanities. However, the current research evaluation paradigm in Taiwan emphasizes disproportionately on journal articles and relatively undermines the contribution and significance of scholarly books as a scholar's research achievement. This has negatively influenced the writing and publishing of scholarly books in humanities and social sciences; one of the affected subject disciplines is sociology. Traditionally, authoring monographs is deemed as a major achievement among sociologists. However, under the current research evaluation practices, Taiwanese sociologists have been facing a variety of

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problems and challenges particularly regarding their promotion and competitions for research funding and/or rewards.

In this naturalistic investigation, the authors interviewed fourteen sociologists on their experiences and dilemmas with authoring monographs and how what perceived as possible solutions to the problems. Using a purposive sampling strategy, the researchers recruited six scholars from Academia Sinica and eight from sociology departments of six different universities. The interviews were conducted during August and November, 2015. Each interview took 60-90 minutes. The interview guide was as follows.

Table 1 The Interview Guide

Research goal: to describe the experiences and problems of the sociologists who have authored monographs under the current research evaluation practices

1. Recent research evaluation practices including promotion and rewards for research performances tend to encourage the production of journal articles. In your opinion, how does that affect the writing and publishing of scholarly books in sociology? Have you been affected by that in any way?
 2. Given the situation, why do you continue to publish scholarly books? Have you encountered any difficulty during book writing and publishing? How did you cope with the problems?
-

Research goal: to synthesize the viewpoints of the sociologists about problems in writing scholarly monographs in sociology and the perceived possible solutions to the problems.

1. What problems or difficulties have you encountered, as an author or a reviewer, in the pre-publishing peer-review of a book draft? What are the differences between reviewing a book draft and reviewing a journal paper manuscript?
 2. In your opinion, how may the peer review of book draft be improved to benefit scholarly communication and knowledge advancement in sociology?
 3. In your opinion, what changes should be made to the existing research evaluation to better fit the research convention in sociology?
-

The research findings revealed that sociologists value books as a form of research output for the following reasons: (1) scholarly books promote the development and localization of sociological theories; (2) the length of a book makes it possible to accommodate a comprehensive, complex and multi-layered discourse; (3) scholarly books are better carriers of comprehensive syntheses of existing research literatures; (4) authors are more likely to innovate scholarly writing and research presentation in a book; (5) the publishing of scholarly books helps to characterize a scholar and boost his/her scholarly visibility and impact; (6) the book writing process often involve rich exchange of ideas and information between the author and the other potential readers, thus making it a real beneficial and constructive scholarly communication experience; (7) books are more visible and impactful in influencing public policies.

The interviewees considered the over-emphasis on journal articles have negatively influenced sociology in three aspects. First, the over-reliance on the shorter-length journal papers may result in scattered production of sociological

knowledge and thereby hindering the development of mega theories. Second, the journal-focused evaluation has over encouraged the submission to SSCI and TSSCI-indexed journals, which may in turn suppress certain research areas that are not favored by those publication venues. Third, because the current journal-focused evaluation practices also favor English publication over Chinese publication, it may thereby weaken the dissemination, communication, and localization of sociological knowledge in Taiwan.

The interviewees reported that they faced the following difficulties in writing and publishing monographs. First, authoring books takes a much longer time and greater effort than writing journal papers, making it a hard decision for scholars if they have to face the pressures of promotion and other performance reviews. Second, the market for Chinese scholarly books is extremely small, and the publishing opportunities for Taiwanese sociologists in international book market are also rather rare. Scholars who write books may have to handle publisher problems during the book publishing process, a situation that does not occur in writing journal paper. Third, the existing journal-focused evaluation practices result in a huge pressure for sociologists who need longer time in book writing. They may lack countable research outputs for a rather long period of time and receive disproportionate reward for book writing. Based on those problems, they proposed the re-adjustment of rewards for books and journal articles in research evaluation to make it more reasonable for people who author monographs. Some also suggests that the evaluation for book-writing scholars may reasonably shift focus from the “end-product” (the book) to the knowledge production (book writing) process. Other suggestions include the reconstruction of pre-publishing peer review practices for book drafts and the improvement of scholarly publishing in Taiwan.

Given the participant suggestions, this study reflected and discussed the possibility and potential problems with the proposed book-writing process review and double-blind peer review for book drafts. One of the goals of research evaluation is to ensure that scholars are fulfilling their research duties. While the shift to monitoring book-writing process sounds viable, whether it is sufficient to hold a scholar accountable for fulfilling his/her responsibility requires further deliberation. A researcher’s writing plan may alter during the writing process for theoretical or other social reasons. That can complicate the evaluation and render it questionable.

Whether double-blind review is a good strategy to ensure the production of good books is another question to ponder. Interviewees reported numerous reasons and incidents that seriously challenge the reliability of double-blind review in sociology. Further, they questioned if scholarly publishers in Taiwan

may serve as serious and vital gatekeepers for high-quality scholarly books. Whether the proposed solutions are viable means for improving existing research evaluation awaits further investigation and more future discussions.

ROMANIZED & TRANSLATED REFERENCE FOR ORIGINAL TEXT

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A Revenue Analysis on Taiwan's Publishing Industries from the Prospective of Knowledge Discovery Using Government's Financial Database

Ming-Ju Hsu*

Abstract

This research focused on retrieving and analyzing data and information from the "Financial Database" established by the Ministry of Finance of Republic of China (Taiwan), carrying out a Knowledge Discovery from the Financial Database (KDFD) 2013~2015, primarily on Taiwan's Nine(9)-subclass Publishing Industries. The results of the research showed that: a) the sales revenues of Taiwan's Publishing Industries have declined year after year from 2013 to 2015; b) within the year there was a wave of steep drop in sales from May to June, then the sales revenues gradually recovered and reached the peak in November to December and c) Newspapers, magazines and books publishing were still the dominate part of the sales for the Publishing Industries (82.1%). While the Digital Publishing Industries accounted for an average of 16% of total sales revenues from 2013 to 2015, the growth spurs from 11% in 2013 to 16% in 2014, then to 20% in 2015 were quite impressive, indicating a potential growth for Digital Publishing Industries. The definition of the publishing industries categorized by the government of Taiwan included nine subclasses in the whole division, further study could be conducted for each subclass of the publishing division to obtain its actual sales revenues for a more realistic comparison with surveyed data.

Keywords: *Publishing Industry, Digital publishing, Data mining, Knowledge discovery in database, Decision tree analysis, Sales revenue*

Introduction

Research background

Based on Wischenbart & Krenn's Publishing Industry revenue statistical views in 2014,¹ the accounting and statistics of sales revenues on Taiwan's Publishing Industry faced several layers of complexities due to a lack of standard or regulation; even simple parameters such as what types of publishing industries should be included, or which sectors could be excluded, what kind of statistics should be collected for comparison, what were the definitions of Consumer Price at Market Value or Total Production Output Value, etc., all were confusing and lacked of clarifications.

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The official surveys on Taiwan's Publishing Industry initially were conducted by the Council for Cultural Affairs, Executive Yuan for nearly the last two decades; the survey responsibility was then transferred to Government Information Office, and then further taken over by the Ministry of Culture due to repeated administrative reconstructions. Publishing Industry Surveys were mainly focused on book publishing, while magazine publishing surveys were scarcely conducted. The targets of the surveys had always been focused on the "Class 5811-5820" of the Standard Industrial Classification System. After the recent adjustment of the supervision responsibility for the Publishing Industry in Taiwan, three used-to-be independent surveys for the book, magazine and digital publishing, respectively, were integrated into one comprehensive survey for synergy and efficiency in 2015. Moreover, the survey frequency has been changed from once every other year to annual, to better grasp the context and fast changing trends of the Publishing Industry.² However, the survey related investigations and preparations as well as the subsequent data analysis for Taiwan's Publishing Industry were very time consuming, labor-intensive and expensive; the numerous data were somewhat scattered and hard to theorize for trend or pattern determinations. The resulted analysis tended to be misleading and shown significant gaps between expected and supplied information.³ In view of these problems, this research thus collected the actual Publishing Industry's sales revenues data to analyze its overall market performances and future development trends. Hopefully the study results and conclusions could provide a meaningful guideline for the government setting better policies and Publishing Industries designing more productive, forward-looking marketing strategies.

Research purposes

Sales revenue is the lifeline of any industry's development; sales revenues data also reveals the market strengths or weaknesses of a given industry. The purposes of this research study were: a) Use Literature Review to collect the official survey reports on publishing industries' sales revenues, comparing them with the actual sales data from the publishing industries; b) Use Data Mining and Decision Tree analysis to uncover any hidden patterns, trends and relationships on Publishing Industries' sales revenues versus parameters such as fiscal years, bi-monthly period and types of enterprises from the Financial Database.

Standard Industrial Classification and Sales Survey for Taiwan's Publishing Industry

Category and classification of Taiwan's publishing industry

In January of 1967, the government in Taiwan announced the "Standard Industrial Classification", the Publishing Industry was one of the Division

in the Standard Industrial Classification, under Section J “Information and Communication”. In the last fifty years, the classifications of “Publishing industries” have gone through ten times of amendments. In the latest version released in January 2016, the Publishing Industry in conjunction with “Audio/Video Production, Dissemination and ICT Services” were jointly subordinated into “Section J”,⁴ becoming a more important and significant section by themselves.⁵

Based on the “Standard Industrial Classification”, Publishing Industries were categorized into “Division 58”, which included Newspapers, Magazines, Journals/Periodicals, Book, Software and Other Types of Publishing Industries, etc. “Division 58” was further divided into “Group 581” and “Group 582” two subcategories, respectively. “Group 581” included Newspapers, Magazines, Journals and Periodicals, Books and Other Publishing Activities, while “Group 582” included the Software Publishing Industries, which further subdivided into “Game Software Publishing” and “Other Software Publishing”. Table 1 listed a detail classification for Taiwan's Publishing Industries.

Table 1 Standard Industrial Classification for Taiwan's Publishing Industries

Division 58 publishing activities	Group	Class	Subclass	Publishing type (a sub-category classified)	Description	Form of publication
58	581	5811	5811-11	Publishing of newspapers	This subclass includes the activities of publishing of printed newspapers, including advertising newspapers.	Printed Form
58	581	5811	5811-12	Digital news publishing	This subclass includes the activities of publishing of newspapers, including advertising newspapers in electronic forms, including on the Internet.	Digital Form
58	581	5812	5812-11	Publishing of magazines and periodicals	This subclass includes the activities of publishing of periodicals and other journals, which can be done in print.	Printed Form
58	581	5812	5812-12	Digital publishing of magazines and periodicals	This subclass includes the activities of publishing of periodicals and other journals in electronic forms, including on the Internet.	Digital Form
58	581	5813	5813-11	Book publishing	This subclass includes the activities of publishing books in print (Reference books, dictionaries, encyclopedias, atlases, maps and technical manuals).	Printed Form

58	581	5813	5813-12	Digital book publishing	This subclass includes the activities of audio books or web publishing books and other forms (Reference books, dictionaries, encyclopedias, atlases, maps and technical manuals).	Digital Form
58	581	5819	5819-00	Other publishing activities	This subclass includes the activities of catalog, brochures, photos, postcards, greeting cards, reproductions of works of art, telephone books, advertising material, directory and mailing list.	Printed Form
58	582	5820	5820-11	Game software publishing	This subclass includes the activities of publishing of computer games for all platforms.	Digital Form
58	582	5820	5820-99	Other software publishing	This subclass includes the activities of publishing of ready-made (non-customized) software: operating systems, business and other applications.	Digital Form

Source: Directorate-General of Budget, Accounting and Statistics, *Standard Industrial Classification System of the Republic of China (Rev.10)* (Taipei: Executive Yuan, 2016), 9-10, 98-99.

Sales survey for Taiwan's Publishing Industries

There were three key elements in conducting a survey for Taiwan's Publishing Industry, namely the total volume of publications, the total number of publishing houses and the total production of publishing output. These three elements were essential in reflecting the strength and magnitude of the publishing industry of any country.⁶ Note the term "Total Production of Publishing Output" was not clearly defined and needed to be further specified; in the meantime, the most important Publishing Output value of printed book publishing in Taiwan was its actual total sales revenues.⁷

Taiwan's survey study on Publishing Industries went through three different periods in the last 20 years. The Council for Cultural Affairs started to issue a "Market Survey for Taiwan's Book Publishing" in 1998, this annually issued survey ended in 2001. Then the Government Information Office took over the governing responsibility and conducted surveys for Book and Magazine Publishing Industries, respectively (from 2003 to 2011). In 2012, the Ministry of Culture further took over the survey responsibilities from the Government Information Office and in 2015 the surveys for Book, Magazine and Other Types of Publishing Industries were integrated into one consolidated survey.

There were several intertwined factors affecting the accuracy of the survey results on Taiwan's Publishing Industry in the past: a) A lack of objective, competent and reputable survey institutions in Taiwan; b) Many publishing companies treated some business data as vital trade secret and either were reluctant to provide, or giving plausible data, making the year-by-year comparison difficult and unreliable⁸; c) Survey agencies could have withheld some data due to unspecified reasons, the transparency and credibility of the survey became questionable⁹; d) Governmentally published Production Output Values were estimations only¹⁰; and e) All other factors such as the gaps between the non-book type sales, number of copies printed, quantity of books ordered versus the actual number of sales achieved. Moreover, other complexities such as various discounts through different sales channels, book return rates, damages and loss, unfavorable payment terms, profit sharing, delinquent accounts and revenue turnover issues, etc., these factors and complexities could have made accurate surveys and reliable total sales revenue of Publishing Industry in Taiwan very difficult.¹¹

Publishing revenue includes publishers' net revenue (from book sales, exports, rights and licenses for print and digital, including educational and professional publishing) and market value at consumer/retail prices. The difficulty in gathering different data sources and gaps between reality and statistics may cause the accuracy of the data.¹² The total sales revenue of Taiwan's Publishing Industry was a critical indicator of the competency and overall operation efficiency of the industry. Take the book publishing industry as an example, its annual sales revenue was a symbol of the industry's strength and magnitude, its year-by-year revenue comparison could indicate the industry's growth potential or decline concern, etc.¹³ Surveys on Taiwan's Publishing Industry have been focused on books and magazines revenues for a long time. In recent years, the Ministry of Culture (MOC) started to promote the growth and development of the Digital Content Industry and thus began to issue Output Values (revenues) surveys on Digital Publishing Industry and e-Magazine Industry. The Ministry of Economic Affairs also published some revenue data on the Digital Content Industry, see Table 2.

The total book sales calculated by MOC was based on the total sale volumes (survey result from publishing entities including new, reprint, and revised sale volumes) multiplied by the average price of each category. The unaccounted sales value was an average number from those publishing entities who did specify such values. Therefore, MOC published total book sales could deviate from the actual book sales significantly.

The Digital Content Industry were divided into eight different divisions by the Industrial Development Bureau of Ministry of Economic Affairs, three

Table 2 Survey Report of the Output Value (Revenue) on Taiwan's Publishing Industries from 2013 to 2014 by Governmental Agency

	2013 NT\$ billion	2014 NT\$ billion	Source
Magazine Publishing Industry	16.5	15.8	Ministry of Culture
Digital Magazine Publishing Industry	0.13	0.28	Ministry of Culture
Book Publishing Industry	28.1	24.3	Ministry of Culture
Digital Book Publishing Industry	0.51	0.53	Ministry of Culture
Digital Game Industry	45.32	50.6	The Industrial Development Bureau of MOEA
Content Software Industry	202.5	210	The Industrial Development Bureau of MOEA
Digital Publishing and Archive (Digital Magazines, Books etc., Digital Archive)	52.8	49.2	The Industrial Development Bureau of MOEA

Source: Ministry of Culture, *Survey of Taiwan's Publishing Industry for 2013-2014* (Taipei: Ministry of Culture, 2015), II-VII; Industrial Development Bureau, Ministry of Economic Affairs, *Digital Content Industry Almanac 2014* (Taipei: Ministry of Economic Affairs, 2015), 126-28, 162-63, 182-83.

Note: Data was not available on year 2015; Ministry of Culture did not conduct survey on Newspaper Publishing Industry.

divisions related with the Publishing Industries were the Digital Publishing and Digital Archives, the Digital Games and the Content Software Industry, respectively. These classifications were somewhat inconsistent with the Publishing Industry's definitions of Digital Newspapers Publishing, Digital Magazines (Periodicals), Digital Book Publishing, Games Publishing and Other Software Publishing based on the "Standard Industrial Classification System of the Republic of China" on Publishing Industry (Rev.10, 2016).

On the other hand, the output values surveyed by the Ministry of Economic Affairs were both a qualitative research and a quantitative study. The qualitative research used interviews with publishers and experts of publishing industries, combined with the opinions from the industries' experts, manufacturing associations and major publishing firms to reach a consensus on the total output value. The quantitative study collected revenue data from the questionnaire on digital content related publishers, weighted in accordance with their respective sizes, further supplemented with the published annual survey report and industry assets report to reach an estimation of the total sales revenues,¹⁴ the estimated revenue was not the actual sales revenue, either.

Research Design and Implementation

In the past, official survey reports on Publishing Industry were relied on the questionnaire inquiring the publishing firms to estimate their approximate annual sales revenues. This research, on the contrary, used Data Mining technology to retrieve the actual sales revenues from the bimonthly business taxes reported by the publishing companies residing in the Financial Database of the Ministry of Finance. Note enterprises with monthly sales less than NT\$200,000 were deemed as small scale enterprises for business tax purposes, and for those with monthly sales less than NT\$80,000, they were exempted from the business tax, with some exceptions applied to certain business.¹⁵

Research methodology

As per the study of Chiu,¹⁶ several methods commonly used to understand and predict the sales market of publishing industries included, but not limited to the followings: inquiring experts' opinions, focus group interviews, industry census or questionnaire survey and data comparing and analysis. All of them were approximate, estimations of sales for the publishing industries. Contrary to all previous research, this study applied Data Mining technique to retrieve the actual sales revenue data from the financial database resided in the Ministry of Finance. Noted that the data obtained were Publishing Industries' sales tax data, which were required to be reported to the Finance Ministry by law, thus, these were actual sales revenue data from the Publishing Industries.

Research implementation

a. Steps of the Knowledge Discovery in Database

This research applied data mining technique directly into the Financial Database of the Ministry of Finance to retrieve the business tax information, then backtracking and transforming the tax data into the actual sales revenues of the Publishing Industries. Since all the data were based on business tax reported under government regulation, the sampling errors were very low and the accuracy and confidence level of the data analysis very high. The steps of Knowledge Discovery¹⁷ in Financial Database (KDFD) for the sales revenues of the Publishing Industries were shown in the schematic diagram of KDFD process, see Figure 1.

b. Data Parameters in Financial Database

Revenue data in the Financial Database were screened and retrieved under different parameters such as year, bi-monthly sales, and types of enterprises to study the relationship between the sales revenue and the designate parameter, see Table 3.

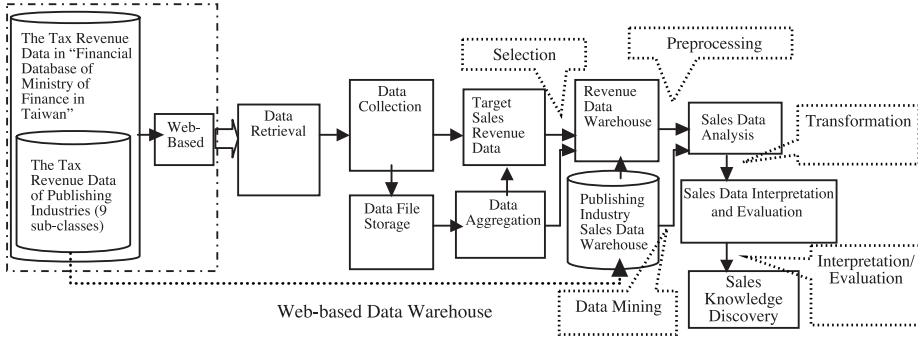


Figure 1 Knowledge Discovery in Financial Database (KDFD)

Source: Ming-Ju Hsu, “Jiao yu bu da xue xiao yuan ke cheng zi yuan wang zhi yuan ke cheng fa zhan mo shi zhi jian gou chuan bo xue men xi suo wei shi zheng [A Study on a Supporting Model for Curriculum Development Using Data Warehouse Technology],” *Zhong hua yin shua ke ji nian bao* [Journal of CAGST] 2012, (June 2012): 580.

Table 3 Descriptions of the Data Variables in the Financial Database to be Studied

Parameters	Descriptions	Data presentation
Years	Divided into year 2013, 2014, 2015	Year 2013 to 2015
Bi-monthly	Since the business taxes were declared bi-monthly, revenues within a year were grouped into 6 periods, coded from 1 to 6. Jan.-Feb. (1), Mar.-Apr. (2), May-June (3), July-Aug. (4), Sept.-Oct. (5), Nov.-Dec. (6)	Presented in 6 bi-monthly periods within a year, coded 1 to 6.
Types of publishing enterprises (Publishing sub-class)	Types of publishing enterprise were divided into 9 sub-classes: (1) 5811-11 Newspapers Publishing Industry, (2) 5811-12 Digital Newspapers Publishing Industry, (3) 5812-11 Magazines (periodicals) Publishing Industry, (4) 5812-12 Digital Magazines (periodicals) Publishing Industry, (5) 5813-11 Book Publishing Industry, (6) 5813-12 Digital Book Publishing Industry, (7) 5819-00 Other Publishing Activities, (8) 5820-11 Game Software Publishing Industry, (9) 5820-99 Other Software Publishing Industry.	Presented in 9 different types of Publishing sub-classes, coded as 1 to 9
Revenues	Revenues classified by year, bi-monthly and types of enterprise	Revenue under each category

Statistics and Analysis

Descriptive statistics

This research applied Data Mining technique to the Financial Database of Ministry of Finance to discover the actual sales revenues of Publishing Industries under 9 different types from fiscal year 2013 to 2015. There were significant gaps in Publishing Industries’ output values estimated by the government’s official surveys and the actual sales revenues obtained from the Financial Database by this study. For example, the actual sales revenues data mined from the Financial Database were greater than the sales output values estimated by government surveys in Magazine, Digital Magazine (2014) Publishing Industries, respectively.

While the actual sales revenues were less than the sales output values estimated by the surveys in Book, Digital Book, Game Software, and Other Software Publishing Industries. Note the classifications and scopes of Game Software Publishing Industry and Other Software Publishing Industry by the surveys were different from the Financial Database of the Ministry of Finance, which inevitably would cause some inherent difference between the surveyed sales output values and the actual sales revenues. In addition, the surveys conducted by the Industrial Development Bureau of the Ministry of Economic Affairs have included the total assets of Digital Archives into the sales output values shown in Table 2, thus, like apples and oranges, creating significant gaps, making comparisons unrealistic. Table 4 showed Publishing Industries' sales revenues comparisons between surveys by the Ministry of Culture, Ministry of Economic Affairs and those retrieved from the Financial Database of the Ministry of Finance.

Table 4 Sales Revenues of Publishing Industries: Surveyed Results by Ministry of Culture & Ministry of Economic Affairs vs. Data Mined Results from Financial Database of the Ministry of Finance

Enterprise types and publishing subclasses	Gov.'s official surveys Ministry of Culture Min. of Econ. Affairs			Financial Database of the Ministry of Finance Unit: Thousand NTD			Compared Results
	2013	2014	2015	2013	2014	2015	
5811-11 Newspapers publishing industry	—	—	—	14,513,158	12,886,395	12,579,813	2013 - 2015 No surveyed data from Ministry of Culture
5811-12 Digital newspapers publishing industry	—	—	—	0	9,412	16,289	2013 - 2015 No surveyed data from Ministry of Culture
5812-11 Magazines (periodicals) publishing industry	16.5 billion NTD	15.8 billion NTD	—	17,216,463	16,736,813	16,419,750	1. 2013 actual sales > surveyed sales by 716 million NTD 2. 2014 actual sales > surveyed sales by 936 million NTD 3. 2015 no surveyed data from MOC
5812-12 Digital magazines (periodicals) publishing industry	130 million NTD	280 million NTD	—	0	1,417,860	586,453	1. 2013 actual sales < surveyed sales by 130 million 2. 2014 actual sales > surveyed sales by 1.14 billion NTD 3. 2015 no surveyed data from Ministry of Culture
5813-11 Book publishing industry	28.1 billion NTD	24.3 billion NTD	—	26,995,481	22,692,177	19,048,408	1. 2013 actual sales < surveyed sales by 1.10 billion NTD 2. 2014 actual sales < surveyed sales by 1.61 billion NTD 3. 2015 no surveyed data from Ministry of Culture

5813-12 Digital book publishing industry	510 million NTD	530 million NTD	—	105,439	140,261	201,758	1. 2013 actual sales < surveyed sales by 404 million NTD 2. 2014 actual sales < surveyed sales by 389 million NTD 3. 2015 no surveyed data from Ministry of Culture
5819-00 Other publishing activities	—	—	—	1,567,059	1,569,597	1,358,785	2013 - 2015 no surveyed data from MOC
5820-11 Game software publishing industry	45.3 billion NTD (Digital game industry)	50.6 billion NTD (Digital game industry)	—	6,664,011	7,529,996	9,080,080	1. 2013 actual sales < surveyed sales by 38.64 billion NTD 2. 2014 actual sales < surveyed sales by 43.07 billion NTD 3. 2015 no surveyed data from Industrial Development Bureau of MOEA
5820-99 Other software publishing industry	202.5 billion NTD (Content software industry)	210 billion NTD (Content Software Industry)	—	714,522	1,438,809	2,179,380	1. 2013 actual sales < surveyed sales by 201.79 billion NTD 2. 2014 actual sales < surveyed sales by 208.56 billion NTD 3. 2015 no surveyed data from Industrial Development Bureau of MOEA

Note: The surveyed sales data for fiscal year 2015 were not yet available from the Ministries of Culture and Economic Affairs.

Data mining

a. Decision Tree Analysis

This research used “Decision Tree” to explore the actual sales revenues of Publishing Industries against parameters such as years, bi-monthly sales and enterprise types from 2013 to 2015, respectively.

Algorithms of the Decision Trees included: ID3 (Iterative Dichotomiser 3); C4.5; C5.0; Exhaustive CHAID (Chi Square Automatic Interaction Detector); QUEST (Quick Unbiased Efficient Statistical Tree); and CRT (Classification and Regression Tree, also known as C&RT, CART), etc. The criteria used to evaluate attributes for splitting node of branching in Decision Tree included: Information Gain for ID3; C4.5; C5.0¹⁸; Gini index, impurity measure for CRT¹⁹ and Chi-Square test of independence for CHAID.²⁰

The research used CRT method to explore the scaled dependent variables, all splits are binary recursive partitioning and each parent node was split into only two child-nodes, thus maximizing the within-the-node homogeneity. All observation values in the terminal node possessed the same value of the dependent variable, thereby producing accurate, homogeneous subsets. The impurity measurement of the scaled dependent variables used the least-squared deviation (LSD), to compute it as the within-the-node variance, which can be adjusted for

any frequency weights or influence values.²¹

CRT used the impurity function to find the best location from all the independent variables as a splitting node, to divide the sample into two subgroups with highest homogeneity, whose evaluations depended upon the attributes of variables. For example, categorical (nominal, ordinal) dependent variables could use Gini, Twoing or Ordered Twoing methods; and LSD method could be used to evaluate continuous variables.²² Each node represented a dependent variable on the CRT map. Each node on the tree displayed mean, standard deviation, observed value and predicted value for scaled dependent variables. The predicted value was the mean value for the dependent variable at the specified node.²³

The findings were presented in the followings:

Table 5 listed the sales revenues vs. fiscal years, bi-monthly and enterprise types, respectively, obtained by the Decision Tree analysis. Figure 2 displayed the Decision Tree for sales revenue vs. fiscal year relations with 5 nodes. Figure 3 displayed the Decision Tree for sales revenue vs. bi-monthly relation with 3 nodes. Figure 4 displayed the Decision Tree for annual sales revenue vs. the enterprise type relation with 3 nodes, respectively.

Table 5 Sales Revenues vs. Fiscal-Year, Bi-Monthly and Enterprise Type, Obtained by the Decision Tree Analysis, respectively

A. Sales Revenues vs. Fiscal-Year		
Nodes	Descriptions	The number of observations
Node 0	From 2013 to 2015, the average bi-monthly sales per publishing sub-class was \$1.20 billion NTD	All numbers of observations, 162 (100%)
Node 1	The average bi-monthly sales per publishing sub-class was 1.26 billion NTD in 2013	54 items of observations (33.3%)
Node 2	The average bi-monthly sales per publishing sub-class was \$1.17 billion NTD in 2014 and 2015 combined	108 items of observations (66.7%)
Node 3	The average bi-monthly sales per publishing sub-class was 1.19 billion NTD in 2014	54 items of observations (33.3%)
Node 4	The average bi-monthly sales per publishing sub-class was 1.14 billion NTD in 2015	54 items of observations (33.3%)
B. Sales Revenue vs. Bi-Monthly		
Nodes	Descriptions	The number of observations
Node 0	From 2013 to 2015, the average bi-monthly sales per publishing sub-class was 1.20 billion NTD	All numbers of observations, 162 (100%)
Node 1	The average bi-monthly sales per publishing sub-class was 1.09 billion NTD in Jan.-Feb. (1), May-June (3), and July-Aug. (4) combined	81 items of observations (50.0%)
Node 2	The average bi-monthly sales per publishing sub-class was 1.30 billion in Mar.-Apr. (2), Sept.-Oct. (5), and Nov.-Dec. (6) combined	81 items of observations (50.0%)

C. Sales Revenue vs. Enterprise Type

Nodes	Descriptions	Total number of observations
Node 0	From 2013 to 2015, the average bi-monthly sales per publishing sub-class was 1.20 billion NTD	All items of observations, 162 (100%)
Node 1	The average bi-monthly sales per publishing sub-class of the Newspapers, Magazines (Periodicals) and Books Publishing Industries combined was 2.95 billion NTD	54 items of observations, 33.3% (sales revenue were 159,088 million, accounted for 82.1% of the total sales revenue)
Node 2	The average bi-monthly sales per publishing sub-class of Digital Newspapers, Digital Magazines (Periodicals), Digital Book, Other Publishing Activities, Games and Other Software Publishing combined was 320.2 million NTD	108 items of observations, 66.7% (sales revenue were 34,579 million, accounted for 17.9% of the total sales revenue)

Note: Numeric codes 1 -6 were a bi-monthly coding, 1 represented the first two months of the year, and so forth.

b.Sales Revenues vs. Three Different Parameters

1. Sales Revenue vs. Fiscal-Year

Figure 2 displayed the Decision Tree for sales revenue vs. fiscal year relations with 5 nodes.

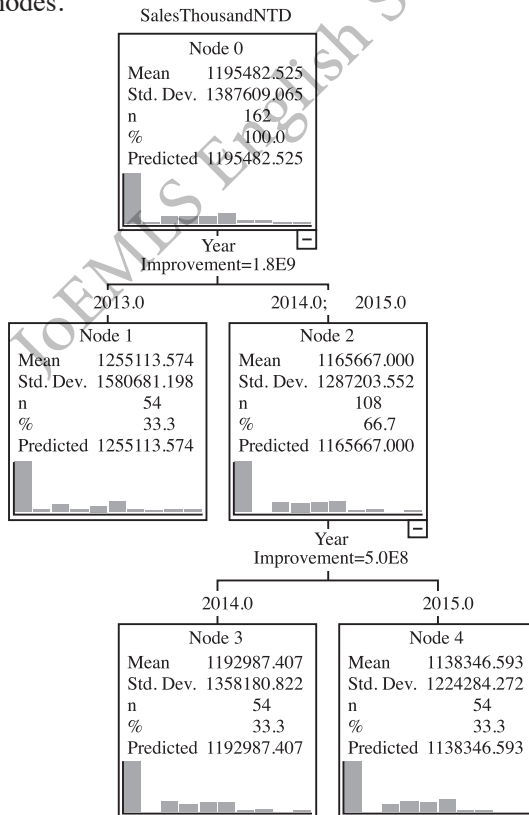


Figure 2 Decision Tree for Annual Sales Revenue vs. Fiscal-Year

In this study, the decision tree nodes were divided into fiscal-year 2013, 2014 and 2015 three groups, and the total revenue was the dependent variable (Table 6). Levene's Test of Homogeneity of Variances²⁴ showed $F=1.729$, $p=.181>0.05$, p-value was greater than the level of significance, so it agreed with the Test of Homogeneity of Variances. The results showed that there was no significant difference in variances among the three fiscal-year groups and the degree of dispersion was similar. Further, the result of the one-way variance analysis showed $F=0.095$, $p=0.910>0.05$, indicating that there was no significant difference in revenues for each fiscal year statistically. However, comparing the means of the three fiscal years indicated that the average sales revenues of each publishing subclass were decreasing year by year, from 1.26 to 1.19 then to 1.14 billion NTD continuously.

2. Sales Revenue vs. Bi-Monthly Period

Figure 3 displayed the Decision Tree for sales revenue vs. Bi-Monthly Period relation with 3 nodes.

In this study, the decision tree nodes were divided into two groups, with bi-month sales period of January-February, May-June and July-August as one group, and March-April, September-October and November-December as another group, with the total revenues as the dependent variable (Table 6). Levene's Test showed $F=3.258$, $p=.073>0.05$ and it met the test of homogeneity variance. The result indicated no significant difference in variances between the two groups and the degree of dispersion was similar. Assuming an equal variance, $t = -.943$, $p = 0.347>0.05$, indicating that there was no significant difference between the two groups.

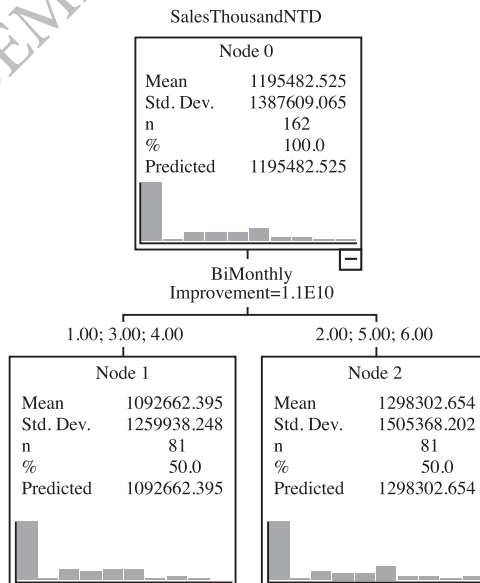


Figure 3 Decision Tree for Sales Revenue vs. Bi-Monthly

However, the means indicated the sales revenue of the second half of the year was better than that of the first half of the year.

In general, the average bi-monthly sales revenues per publishing sub-class were low in the first 2 months of the year, then increased some, but experienced a steep drop in May/June, July/August months, then gradually picked up in September/October and reached the peak sales months of November/December (Table 6). Factors affecting this cyclical sales performance were not clearly known, but seasonal buying and consumer sentiments at certain occasions probably accounted for significant swings in buying mood at a given time.

3. Sales Revenues vs. Enterprise Type

Figure 4 displayed the Decision Tree sales revenue vs. enterprise type relation with 3 nodes.

In this study, the decision tree nodes were divided into two groups, the Newspapers, Magazines and Books Publishing Industries as one group, and the Digital Newspapers, Digital Magazines (Periodicals), Digital Book, Other Publishing Activities, Games and Other Software Publishing as another group (Table 6). Levene's Test showed $F=18.747$, $p=0.000 < 0.05$, indicating variance was not homogeneous. In this case, $t=-21.133$, $p=0.000 < 0.05$, the average value of the revenue of each subclass of Newspaper, Magazine and Book publishing

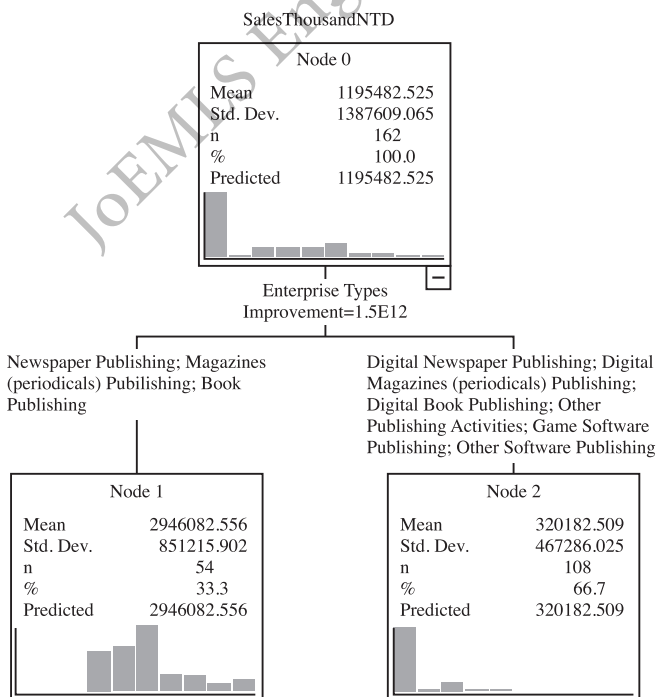


Figure 4 Decision Tree for Sales Revenue vs. Enterprise Type

Table 6 Summary Table of Mean, Standard Deviation, Number of Nodes on Fiscal-Year, Bi-Monthly, Enterprises Type by Decision Tree

Fiscal-Year				
	Gain for nodes	Mean	Std. deviation	N
Sales (Thousand NTD)	2013	1255113.574	1580681.198	54
	2014	1192987.407	1358180.822	54
	2015	1138346.593	1224284.272	54
	Total	1195482.525	1387609.065	162
Bi-Monthly				
	Gain for nodes	Mean	Std. deviation	N
Sales (Thousand NTD)	Jan.-Feb. (1), May-June (3), July-Aug. (4)	1092662.395	1259938.248	81
	Mar.-Apr. (2), Sep.-Oct. (5), Nov.-Dec. (6)	1298302.654	1505368.202	81
	Total	1195482.525	1387609.065	162
	Means of bi-monthly: (1) 1078536.296; (2) 1253976.407; (3) 1086841.519; (4) 1112609.370; (5) 1232572.148; (6) 1408359.407			
Enterprises Type (publishing sub-class)				
	Gain for nodes	Mean	Std. deviation	N
Sales (Thousand NTD)	Newspapers, magazines (Periodicals) and book publishing	2946082.556	851215.902	54
	5 Digital Related Publishing sub-classes and Other Publishing Activities	320182.509	467286.025	108
	Total	1195482.525	1387609.065	162

was significantly higher than that of other six publishing subclasses combined, among them, 5 were Digital Publishing related sub-classes. This finding clearly demonstrated that the printed form publishing was still the dominate part of the sales for the publishing industries.

The average bi-monthly sales revenues per publishing sub-class were 1.20 billion NTD from 2013 to 2015. While the average bi-monthly sales revenues per publishing sub-class for Newspapers, Magazines and Book publishing were 2.95 billion NTD, this was 9.20 times of the average bi-monthly sales revenues per publishing sub-class for the other six (6) sub-classes sales of 320.2 million NTD. These 3 Publishing Industries accounted for 82.1% of the total sales revenue. Among the 6 sub-classes, including 5 Digital Publishing related sub-classes, Digital Newspapers, Digital Magazines (Periodicals), Digital Books, Games Software, Other Software Publishing and Other Publishing Activities had an average of 17.9% of market shares during the 2013-2015 periods.

c. Market Shares of Digital Publishing Sales Revenues

Digital Publishing Industries (5 sub-classes) accounted for an average of 16% of the total sales revenues during the 2013 to 2015 time period. A year-to-

year comparison indicated that the sales revenues of Digital Publishing industries had grown significantly, from 11% of market shares in 2013 to 16% in 2014, then to 20% in 2015, respectively, please see Table 7.

Digital publishing clearly will continue to gain in popularity and enjoys a double-digit growth rate for the foreseeable future. Mobil devices simply create a powerful platform, allowing instant communication and access to digital news, texts, photos, books, music, movies, etc. anytime anywhere with no or little cost. It's considered a disruptive force by the traditional publishing industries. For example, self-publishing has changed the interaction between authors and publishers, enabling a faster, more cost-effective method of publishing impossible

Table 7 2013-2015 Sales Revenues vs. Enterprise Types and Publication Types

Unit: Thousand NT

Enterprise types and publishing subclasses	Enterprise types	2013 Thousand NT (%)		2014 Thousand NT (%)		2015 Thousand NT (%)		Sub-total Thousand NT (%)	
5811-12 Digital Newspapers Publishing Industry	Digital	0 (0.00)	11%	9,412 (0.01)	16%	16,289 (0.03)	20%	25,701 (0.01)	16%
5812-12 Digital Magazines (periodicals) Publishing Industry	Digital	0 (0.00)		1,417,860 (2.20)		586,453 (0.95)		2,004,313 (1.03)	
5813-12 Digital Book Publishing Industry	Digital	105,439 (0.16)		140,261 (0.22)		201,758 (0.33)		447,458 (0.23)	
5820-11 Game Software Publishing Industry	Digital	6,664,011 (9.83)		7,529,996 (11.69)		9,080,080 (14.77)		23,274,087 (12.02)	
5820-99 Other Software Publishing Industry	Digital	714,522 (1.05)		1,438,809 (2.23)		2,179,380 (3.55)		4,332,711 (2.24)	
5811-11 Newspapers Publishing Industry	Printed	14,513,158 (21.41)	89%	12,886,395 (20.00)	84%	12,579,813 (20.46)	80%	39,979,366 (20.64)	84%
5812-11 Magazines (periodicals) Publishing Industry,	Printed	17,216,463 (25.40)		16,736,813 (25.98)		16,419,750 (26.71)		50,373,026 (26.01)	
5813-11 Book Publishing Industry	Printed	26,995,481 (39.83)		22,692,177 (35.22)		19,048,408 (30.99)		68,736,066 (35.49)	
5819-00 Other Publishing Activities	Printed	1,567,059 (2.31)		1,569,597 (2.44)		1,358,785 (2.21)		4,495,441 (2.32)	
Sub-total		67,776,133 (100.00)		64,421,320 (100.00)		61,470,716 (100.00)		193,668,169 (100.00)	

to imagine just a few years ago; another example is Kindle Unlimited (Amazon's Kindle Unlimited e-book subscription service), offering unlimited books to read at discounted fees, which totally disrupted the pricing structures of traditional publishing houses.²⁵

According to PwC (Pricewaterhouse Coopers International),²⁶ although revenues of printed and audio publishing will continue to fall, it would still account for 70% of the total publishing revenues. The combined revenues generated by global print/audio publishing would decrease to \$92.39 billion by 2019, an annual decline rate of 1.9% from \$101.63 billion of 2014. Moreover, educational and professional books will take in \$72 dollars of every \$100 dollars spent in printed books by 2019.

In Taiwan, although sales revenues of printed newspaper, magazine/periodical and book publishing decreased every year from 2013 to 2015, while their digital counterpart of news, magazine and book publishing increased every year at the same time, the magnitudes of the former were simply too huge for the later to be presented with any significance in comparison. More specifically, printed newspaper publishing revenues vs. digital news publishing was 99.94% vs. 0.06%; magazine publishing vs. digital magazine publishing 96.2% vs. 3.8%; and books publishing vs. digital books publishing 99.4% vs. 0.6%. In short, of the three types of publishing enterprises mentioned, paper-media sales accounted for more than 96% of the sales revenues in each subclass (Table 7).

Analysis of the bi-monthly sales revenues indicated that publishing sales were cyclical, January / February sales were typically the lowest, mostly because of shutdown for the Chinese New Year holidays, sales would pick up in March to April, went down continually in the summer season, then went up again in September/October months and reached the peak sales season of November and December. Various cyclical factors should be studied to introduce promotional activities to stimulate the sales revenues.

A major concern was the highest revenue creator in traditional publishing, the Book publishing, had experienced significant sales revenue drops in all 3 years studied. The magnitudes of reductions were far greater than the revenues generated by digital newspaper, magazines and books combined, leaving a huge revenue hole to be filled. A bright side was the emerging Game Software Publishing and Other Software Publishing, which continued to grow from 2013 to 2015 and reached a total 3-year sales revenue of 27,606,798 thousand NTD, which has already exceeded the 2013 Books publishing sales revenue of 26,995,481 thousand NTD.

"Digital Disruption" has caused a shift of publishing paradigm in Taiwan, although the printed publications still hold the majority share of the market at this moment. The followings were several suggestions to help improve its position:

1. In the field of printed publishing, maintain and enhance the paper-media reading experience; create a buying atmosphere at the bookstores; make purchasing more convenient by expanding into new sales channels; diversify marketing strategies and emphasize on consumer interactions; conduct focused promotions and increase the content-value and application of the publication, etc.

2. In response to the impacts of digital publishing, improve efficiency and streamline operation are essential for the traditional publishing industry. Reform and transform, seek synergies and opportunities created by digital publishing can also increase its sales revenues. For example, develop game related publishing and software, IT related publishing, etc.

3. Get involved and mobilize. In other words, traditional publishing industry should also break the barrier by itself and seeks opportunities created by digital disruption. Self-Publishing is a good example, after all, the author's digital creation, also needs to be printed. Editing support, remote consultation and micro-publishing are other opportunities that can enhance the value and position of traditional publishing industry.

Conclusions and Suggestions

Revenues Comparison between this Research and Government's Survey Results

This research compared the publishing industries' sales revenues estimated by surveys by government agencies with the actual sales data obtained from the Financial Database of the Ministry of Finance. The research indicated that the actual sales revenues for the Magazines Publishing Industry were greater than the surveyed estimation by the government agencies, while the actual sales revenues were less than the sales output values estimated by the surveys in Books, Digital Books, Game Software, and Other Software Publishing Industries. The comparison has shown a significant gap between the two methods, most of the surveyed sales output values were greater than the actual sales revenues. In addition, a major factor contributed to this huge difference was a lack of clear and consistent definition for the classification and scope for Digital Publishing Industries, for example, Other Software and Game Software Publishing Industries have shown significant gaps between the surveyed sales output values and the actual sales revenues.

Knowledge Discovery in Financial Database on Publishing Industries

This research used "Decision Tree" to explore parameters such as fiscal year, bi-monthly, and enterprise type on sales revenues from 2013 to 2015. The research found that the average bi-monthly sales per publishing sub-class was around 1.20 billion NTD, and the average bi-monthly sales per publishing sub-

class has shown a continual decline from 2013 to 2015. Within the year, January/February had the lowest sales revenues because of Chinese New Year holidays, the revenues picked up in March/April, then showed a seasonal decline in the summer months, gradually picked up in September/October and reached the sales peak by November/December period. In term of enterprise types, newspapers printing, magazines (periodicals) publishing and hard copy books publishing were still accounted for the majority of the sales for the Publishing Industries in Taiwan. While the Digital Publishing Industries (5 sub-classes) accounted for an average of 16% of the total sales revenues during the 2013 to 2015 time period, the growth spurs from 11% in 2013 to 16% in 2014, then to 20% in 2015 were quite impressive, indicating a potential growth for Digital Publishing Industries in Taiwan.

Although digital publishing in Taiwan has shown impressive growth rates during the studied 3 years (2013-2015), it's still at its initial, developing stage. Sales revenues of traditional publishing still dominate and accounts for 84% of the total revenues generated. Nevertheless, Digital Disruption is for real and should be welcomed, for it signified a new era and a more readily connected world.

Recommendations Derived from the Results of the Study

Promote the advantages of Digital Publishing to further drive up its sales revenues. In each subclass of newspaper publishing, magazine publishing and book publishing, paper-media sales accounted for more than 96% of the sales revenues (Table 7). In 2016, the printed to digital book publishing sales ratio in the United States was projected to be \$30.52 billion dollars to \$7.59 billion dollars,²⁷ or 75.13% to 24.87%. In comparison, the averaged 99.4% to 0.6% ratio from 2013-2015 in Taiwan indicated its digital book publishing needs to be heavily promoted to reach a more balanced ratio for a healthier competition with traditional publishing.

Traditional publishing industry in Taiwan may be impacted negatively in the future, it can survive and even thrive in digital publishing era, as described by the suggestions mentioned in the previous section.

Finally, future government survey of the sales revenues of the Publishing Industries in Taiwan is recommended to adopt this research method, i.e., data mining the Financial Database maintained by the Financial Ministry, to obtain the actual sales revenues, instead continue using estimated revenue numbers.

Recommendation for Future Research

The definition of the publishing industries categorized by the government of Taiwan included nine subclasses in the whole division, future study could be conducted for each subclass to obtain its actual revenue for a more realistic comparison with surveyed data.

Acknowledgements

This work was supported by Mr. S. N. Chen of the Ministry of Finance, he can be reached at snchen@mail.mof.gov.tw

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JoEMLS English Summary



Exploring the Factors Influencing Agencies' Engagement in Open Data: A Case Study of Taichung City Government

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Abstract

Open data has been an important trend among the government administrations around the world. The concept of open data is that, without violating privacy and national security, government data should be open, freely used, and redistributed by the public. It is expected that open data can promote transparency of government. In addition, open data has the potential to stimulate economic growth through value-added applications developed by the public, including citizens, private enterprises, and non-profit organizations. In Taiwan, when realizing the importance of open data, Taiwan government has started promoting the related initiatives in both the central government and local governments. In this research field, most studies have focused on the central government level, on the discussions of the types of open data to be released, and on the promotion of open data activities. Nevertheless, there is still limited research discussing the determinants of open government data, particularly there is a lack from the perspective of local governments. In order to fill this gap, this study explores the determinants of open data by selecting Taichung City Government as a case study. Specifically, this study attempts to identify the factors influencing government agencies' intentions of open data participation. The influential factors are explored from four perspectives: technology, organization, legislation and policy, and environment. In the technological perspective, the identified factors are information system operation, data type, and data format. Second, in the organizational perspective, the influential factors are top management support, cost and benefit, budget and resource, and performance evaluation. Third, legislation and policy is found to have the most significant impact on government agencies. Fourth, in the perspective of environment, both social pressure and peer effect are found to be the influential factors. Lastly, practical implications, limitations, and future research directions are also discussed in the study.

Keywords: *Open government, Open data, Information sharing, E-government*

SUMMARY

Open data has been an important trend among the government administrations around the world. The concept of open data is that, without violating privacy and

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national security, government data should be open, freely used, and redistributed by the public. It is expected that open data can promote transparency of government. In addition, open data has the potential to stimulate economic growth through value-added applications developed by the public, including citizens, private enterprises, and non-profit organizations. Accordingly, government open data can be seen as a huge undeveloped resource for being freely used, reused and distributed, bringing the most value to various fields. As aforementioned, the importance of government open data has been recognized at the global level, and relevant projects have been launched several years ago. In recent years, the issue of open data has aroused discussions, and many government agencies' attitudes toward open data has shifted from being traditionally conservative and protective to more willing to provide more open and transparent data. Some open data policies have been made with the goal of making government data more transparent.

In Taiwan, when realizing the importance of open data, Taiwan government has started promoting the related initiatives in both the central government and local governments. In this research field, most studies have focused on the central government level, on the discussions of the types of open data to be released, and on the promotion of open data activities. Nevertheless, there is still limited research discussing the determinants of open government data, particularly there is a lack from the perspective of local governments. For investigating the factors of influencing local governments' releasing open data, this exploratory study has focused on the Taichung City Government as the studied case, and semi-structured interviews are conducted on 17 participants from 10 bureaus and agencies of the Taichung City Government. Based on literature review, four aspects of interagency information sharing, including technological, organizational, legislation and policy, and external environmental perspectives, have been investigated, and influencing factors are induced and proposed.

From this study, we can see that various factors have impacts on local governments' releasing open data. In the technological aspect, the information system operation and data type and format have impacts on the willingness of persons in charge. Due to the various types of government open data, it takes a lot of efforts to prepare, update and maintain the open data collections. Therefore, if the operation of the information system is complicated and difficult, it will affect the in-charge persons' willingness to use and promote the system. In addition, certain special types of open data collections, such as geographic data, have higher costs in terms of releasing, and it's complicated to convert the original data formats into appropriate ones, thus some government agencies are less willing to release the data.

As to the organizational aspect, involved factors include budget and resource, top management support, performance evaluation, and cost and benefit. The amount of budget and resources has a decisive impact on how active and enthusiastic the administrators or in-charge persons will be. The support from the higher-level management has a great impact. If administrators do not show much willingness to promote the open data policies, the persons in charge would also have a lower willingness. On the other hand, if administrators understand the significance and importance of releasing open data, and set relevant intra-agency standards for performance evaluation, it would be a great help to promote the open data policies. In terms of approaches of updating open data, at present stage it relies mainly on manual operations by persons. Therefore, the issues of human resources, time and cost should also be considered when addressing the organizational factors. In addition, local government agencies tend to evaluate the potential benefits and efficiencies of releasing open data, which are usually not obvious and predictable, therefore most agencies would choose to focus on their core business as the priorities, rather than spend resources on implementing the open data policies.

In the legislation and policy aspect, the setting of standard policies and regulations is the most important factor influencing local government agencies' releasing open data. Without relevant laws and regulations, there would be no protection for the persons in charge in terms of accountabilities, and persons in charge would be less enthusiastic in executing relevant policies and regulations.

The external environmental factors include social pressure and peer effect. In terms of releasing open data, governments would have influences from the public, media and peer government agencies. The social pressure from the supervision of mass media and requests of the public would either enhance or lower government agencies' motivation for releasing open data. In addition, local government agencies would refer to peer agencies' performance of releasing open data, which in turn decides how active and enthusiastic they would engage in their own releasing open data.

This study also reveals that the promotion of local government agencies' open data policies is influenced by the personal perspectives of the persons in charge. This aspect can be further classified into individual factors and external pressures. The individual factors refer to the individuals' willingness of taking actions, including individuals' evaluations and predictions of potential benefits, risks and obstacles. The external pressures refer to how the external factors influence individuals' willingness of taking actions.

Based on the discussions above, we can see that various factors have impacts on local government agencies' releasing open data, and the impacts can be both

negative and positive. On one hand, the impacts can stimulate local government agencies to release open data; on the other hand, the impacts can also deter the development. It is suggested that local government agencies should gradually transform their concepts and attitudes, and hold educational propaganda and training sessions, for persons in charge and administrators to have appropriate awareness and recognition about releasing open data. The in-charge persons should realize that releasing open data would bring benefits to their own agencies, and also promote intra-agency information sharing. In the end of this study, practical suggestions are offered based on research results. It is hoped that these suggestions can help promote releasing open data among local government agencies.

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JoEMLS English Summary



Embracing Ebooks: Acquisition and Collection Development Landscape in Philippine Academic Libraries

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Abstract

In the recent years, libraries are evidently expanding their embrace in adoption of ebooks. This may be attributed to the real and perceived advantages demonstrated by ebooks in terms of accessibility, functionality and cost effectiveness. Increasingly, ebooks form a growing part of the collections in academic libraries as a viable format to support the information needs of their patrons. Some libraries have adopted ebooks on a large scale while others are still tentative in their acquisitions. This study aims to examine the current status of collection build-up of ebooks in different academic libraries in Metro Manila. Specifically, it will look at the extent by which they collect and acquire ebooks as well as the issues being faced by the libraries in their efforts to build their ebook collection. This paper employs a survey method to determine the collection size, selection models, methods of acquisition, budget allocation, collection development policy and other related items. The results of the study will provide an overview of the extent of ebook adoption among the academic libraries in the Philippines. It will also serve as a basis for proposing possible solutions to common issues that confronts the libraries of today concerning integrating ebooks in the collection. Lastly, the findings may also serve as a benchmark for best practices for other libraries.

Keywords: Collection development (Libraries), Acquisitions (Libraries), Electronic books, Academic libraries, Philippines

Introduction

Since 1945 when Vannevar Bush envisioned a hardware device called Memex (Bush, 1945), which developed into what we now call electronic book reader (e-reader), to Project Gutenberg by Michael Hart (Lebert, 2009) in 1971 to the launch of NetLibrary (Hane, 1999) in 1999, ebooks have emerged as a viable format to improve information discovery and delivery. Electronic books or more popularly known as ebooks is defined as “book-length works in electronic, or digital, format that are read on e-readers, smartphones, tablets, and desktop computers” (Dreeuws, 2016, para. 1). Ebooks primary strength lies in the convenience of 24/7 access from anywhere, full text functionality and portability

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(Shelburne, 2009). As such, many academic libraries became early adopters of ebooks and were provided with multiple opportunities to enhance electronic access for their students by supplementing printed book collections with e-book collections (Walton, 2012).

Increasingly, ebooks form a growing part of the collections of academic libraries (Springer, 2008). Walters (2013) reported that a simple Google search will reveal that some libraries have already adopted ebook collection on a large scale, adopting “e-first” approach, while others are still tentative in their acquisitions. This transition has been expected with reference to the success of online journals (Walters, 2013). As so aptly put by Wells and Sallenbach (2015), fundamental to this trend is the “realization that electronic online environment enables libraries to provide a much richer set of resources to a much wider audience, and to remove the barriers of space and time which applied to traditional, print-based collections” (Wells & Sallenbach, p. 169).

In the recent years, Philippine academic libraries are evidently expanding their embrace in adoption of ebooks. This may be attributed to the real and perceived advantages demonstrated by ebooks in terms of accessibility, functionality and cost effectiveness. Many publishers would also reach out to libraries to discuss trends and development in the ebook publishing industry and would offer flexible access terms or consortial deals.

This study examined the current status of collection build-up of ebooks in different academic libraries in Metro Manila. Specifically, it attempted to describe the extent by which they collect and acquire ebooks as well as the issues being faced by the libraries in their efforts to build their ebook collection. It looked into collection size, selection models, methods of acquisition, budget allocation, collection development policy and other items related to ebooks. The results of the study presented an overview of the extent of ebook adoption among the academic libraries in the Philippines. The information gathered may be helpful as a basis for proposing possible solutions to common issues that confronts the libraries of today concerning integrating ebooks in the collection. Lastly, the findings may also serve as a benchmark for best practices for other libraries.

Scope and Limitations

The ebook collections examined in this paper are confined to ebooks that are purchased and exclude open access ebooks. This research is intended to provide background knowledge of the status of ebook collection development and acquisition. It does not look into users’ preferences or ebook usage. It also does not drill down to the very specific practices of individual libraries. It is not exhaustive and focuses only on the university libraries in Metro Manila where majority of universities are located.

Methodology

This paper employed survey method to determine the availability of ebooks in libraries, the collection size, acquisition models and budget allotted to acquiring ebooks. Using Google Forms, a survey questionnaire containing 9 questions was developed and sent out to university libraries across Metro Manila (see Appendix 1 for the survey questions). The options presented on questions 8 and 9 which deal the challenges and advantages of acquiring ebooks was adopted from the Springer White Paper entitled *eBooks – Costs and Benefits to Academic and Research Libraries* which was authored by Rita A. Renner in 2007.

The respondents of this study were the various university libraries in Metro Manila. The list of universities and colleges was retrieved from finduniversity.ph. Of the initial list of 138 colleges and universities, 39 of them have university status.

Aside from emails sent some respondents were also interviewed through the telephone for inquiries and follow up questions. The results are reported as descriptive statistics in the form of frequencies, mean values, and percentages.

Results and Discussions

Twenty-seven (27) universities have responded – 16 (59%) are private universities and 11 (41%) are public – which translates to 69% response rate. Majority of the responses received are from Manila (48%), Quezon City (15%) and Pasig (7%).

eBook Collection Development

Results show that 19 (70%) of the universities who responded already have ebooks in their collection while 8 or 30% do not have ebooks yet. Table 1 also illustrates that 14 libraries or around 74% of those with ebooks are private universities and 5 (24%) are state universities. Based on the phone interview conducted, the limited budget is often the main reason cited for not acquiring ebooks. On the other hand, one library said that they are set to purchase ebooks by 2017.

Table 1 Availability of eBooks in Libraries

type of institution	with eBook	without eBook
public	5	6
private	14	2
Total	19 (70%)	8 (30%)

a. Collection size

The number of ebook holdings among the libraries is quite dispersed ranging from less than 100 titles to more than 30,000 titles on actual volume count. Most of the libraries would still have fewer than 100 titles (37%) and followed by those with more than 100 to 500 titles of ebooks (26%). The remaining libraries already

have thousands of ebooks in their collection denoting that the growing acceptance of ebooks in the universities (see Table 2). Corollary to this, ebooks would comprise 1-5% of the collection of most libraries (47%) and less than 1% of their entire collection for 7 (36.84%) of the respondents. The remaining percentage (15.79%) said that ebooks form part of 10-20% of their entire collection already.

Table 2 Size of eBook Collection

No. of Title	No. of Institution	%
less than 100	7	37
101-500	5	26
501-1,000	1	5
1,001-2,000	2	11
2,001-3,000	0	0
3,001-4,000	1	5
4,001-5,000	1	5
5,001 and above	2	11

b. Inclusion of ebooks in the collection development policy

Since electronic book is considered a new format or medium, there is a need for libraries to revise their collection development policy to serve as guide in acquisition and selection decision as well as to include some principle that would govern ebook selection and acquisitions. While some of the basic principles for other formats still remain true and applicable to ebook, there are still various terms and new business that came with this new medium that need to be introduced and clearly stated.

In the survey conducted, results reveal that 13 (68%) of the libraries have already included ebooks in their collection development policy while 6 (32%) have yet to add ebooks in their policy.

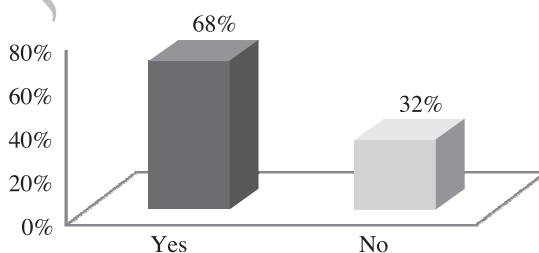


Figure 1 eBook in the Collection Development Policy

eBook Acquisitions

Among the many factors that affect ebook acquisitions (users' preference, infrastructure, access models, etc.) budget remains to be the main consideration. Depending on the license preferred, ebooks may cost more than the printed book and especially when acquired by individual title. For some, the source of fund

may be a dilemma. Will it be from the budget of “books” or from “e-resources?” The next question then would be what proportion of the budget will proceed to ebook acquisition.

a. Expenditure on eBooks

Looking at the average annual expenditures on ebooks, results showed that on average, 4.52% of the yearly budget allotted for books is spent on ebooks. This figure came from the 63% of the respondents who were able to specify the percentage of their budget that goes to ebooks. The remaining 7 (37%) however, did not give a specific amount spent on ebooks; instead they have provided their budget for all their electronic resources. This made it difficult to ascertain the amount they may have spent on ebooks on an annual basis.

In addition, the results also reveal that the average annual expenditure on ebooks ranges from Php50,000 to 500,000. This is true for the 58% of respondents while there is one library who a slightly ahead than the others posting an average annual expenditure of more than Php1M on their ebooks. Although they are a relatively small part of a library’s budget, ebooks are being adopted by librarians, providing an alternative source of information to end users.

b. Acquisition models

Nowadays, librarians are actively engage in reviewing and evaluating ebook offerings. Several acquisition models are offered by ebook publishers or aggregators, each one has its own advantages. Exploring the right model for the library can be challenging.

Basically, ebooks can be selected or acquired as individual titles or as package. Respondents have shown strong preference for the Pick-and-Choose model (42%). Also, there is a significant number (47%) that uses a combination of Pick-and-Choose and By Collection/Packages. In addition, there are libraries that were able to acquire ebooks solely opting the By Collection/Packages or DDA or PDA (see Figure 2).

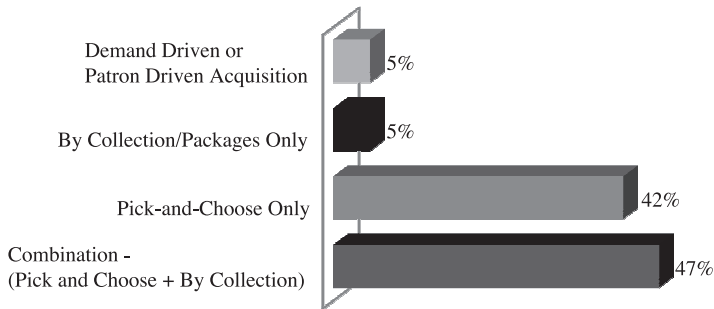


Figure 2 eBook Acquisition Models Used

Pick-and-Choose or title-by-title is popular because this model means libraries only get what they “want” or “need” as opposed to getting more unwanted titles when choosing ebook packages. Also, selecting individual title usually grants libraries perpetual access to the title much like buying a print book. Patron Driven Acquisition on the other hand, allows patron to select book for the library without staff mediation and has a potential to increase the use of academic ebooks.

c. Access and licensing

Unlike print books, ebooks are leased. Publishers and vendors offer three kinds of ebook leases: annual access, perpetual access and pay per use (Walters, 2013). For annual access, library pays a fee to access books for a year and this can be renewed each year. A one-time fee is required for “perpetual access” while on “pay per use,” library pays on titles that have been access or pages that have been viewed.

Figure 3 illustrates that the perpetual access model is the one preferred by 13 or 68% of the libraries. Some (21%) have acquired their ebooks by opting the annual access and 11% currently have ebooks which are purchased on either perpetual or annual access.

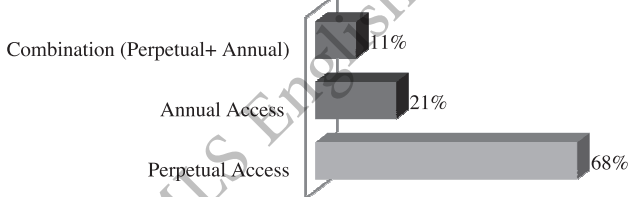


Figure 3 eBook Access and Licence Used

d. Consortial purchasing of eBooks

The role of consortia in acquiring ebooks is evidently growing in importance. It plays a bigger part in development, acquisition and integration of digital scholarly communications in academic institutions (Horava, 2013). Consortia intend to bring added value to any contract in terms of improved pricing, better contract terms and simpler business relationships for libraries (Lowe & Aldana, 2015).

In the Philippines where financial resources are always limited, the participation in consortial license agreements when purchasing ebooks, or e-resources for that matter, is already being practiced by several consortia. This gives the advantage of purchasing resources at a reduced price while having broader access to more titles for members of the consortium.

A positive progress is evident on the survey results as it shows that 4 libraries equivalent to 21% have already participated in consortial deals for

purchasing ebooks. In contrast, 15 or 79% still have not. Despite the benefits, consortial licensing tends to be a bit complicated because some publishers, aggregators or vendors impose greater restrictions on sharing ebooks (Lippincott et al., 2012). Walters (2013) also stressed out that the difficulties of leasing ebooks are multiplied when consortia, rather than individual libraries, handle licensing and payment.

Advantages and Challenges on eBook Acquisitions

Undoubtedly, ebook offers several unique benefits to libraries and their users. It allows “24/7 access, simultaneous user access, wider selection, and immediate updates, while libraries also benefit from back-end efficiencies, such as a lack of storage requirements, reduced maintenance costs, and reduced staffing time for physical handling and processing of print books” (Renner, 2007, p. 2).

Among the top 5 reasons why libraries provide ebooks are: 1) Enhanced user access (100%); 2) Space savings (95%); 3) Cost and time savings (57%); 4) Access to more content (52%); and 5) Greater security, reduced book loss/damage (43%). This result somehow mirrors the report of Renner (2007, p. 4) in Springer’s white paper on ebooks cost and benefits where “enhanced user access, enhanced functionality, and access to greater amounts of content areas all scored highly as areas in which ebooks provided clear advantages over print publications to all participants.”

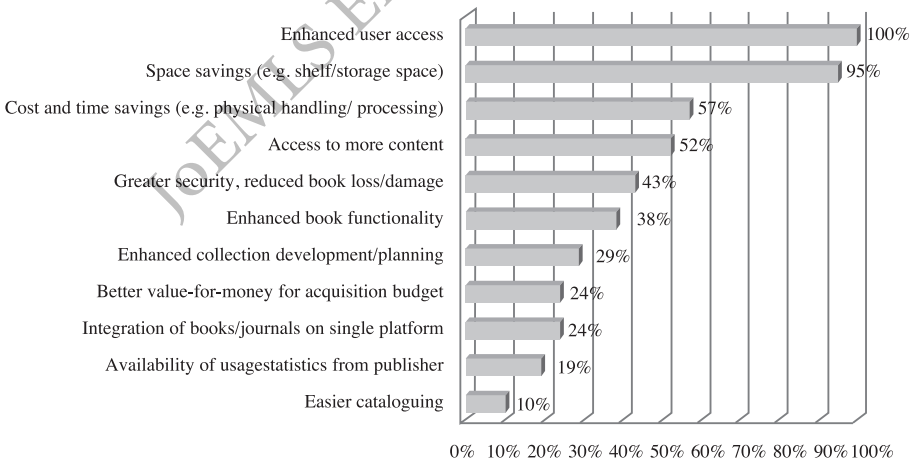


Figure 4 Reasons for Acquiring eBook

Despite the promising benefits of the adoption of ebooks, libraries who are building their ebook collection are also facing several challenges that come with it such as: business models offered by publishers, DRM, delays in the release of ebooks, price and absence of archiving rights.

In the survey, respondents were asked to select the top 5 factors that from

their experience became a deterrent or challenge in acquiring ebooks. As shown in Figure 5, all respondents have said that Cost (100%) is the top concern. Other issues belonging to the top 4 are: Requires good internet connection (84%), Restrictive license provision (79%); Annual recurring payments (74%); and, lastly Requires ebook reader software & varying file formats (e.g., epub, pdf, xml, etc.) (47%).

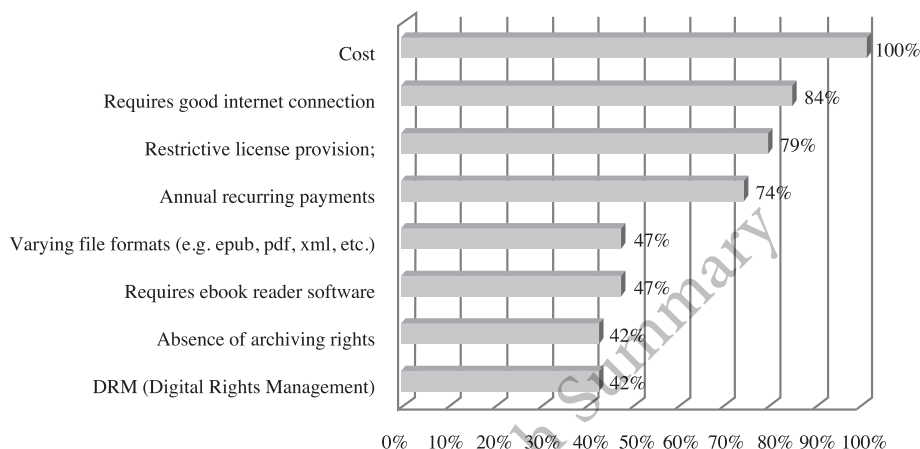


Figure 5 Challenges to eBook Acquisitions

Strong internet connection is definitely necessary to be able to make electronic resources such as ebooks accessible. In the Philippines, this is a common dilemma that most libraries have no control of. On the other hand, restrictive license provision is also a concern. Of the three types of ebook licenses -- annual access, perpetual access, and pay per use -- only perpetual access model supports the principle of sustainable access. However, some publishers may still require platform fees aside from the one-time payment for the content. The other two access type will require a recurring payment from libraries and failure to do so will mean loss of access. Another issue is that many ebooks packages allow suppliers to remove titles from the database without notifying the licensee. This becomes a problem because this hinders them in providing reliable, long-term access to the individual titles within the collection (Walters, 2013).

In terms of format, there is no standard format for ebooks and many formats are readable only through a particular publisher's website or device. The common ebook formats are epub, pdf, html. Epub file standard was established by International Digital Publishing Forum in 2007 to address the issue on content transfer to other systems. However, it still does not ensure consistency in the presentation of text. A file format may be readable on many different platforms but it will not necessarily look the same on each one.

Conclusions and Recommendations

Libraries in the Philippines, specifically in Metro Manila, are apparently beginning to supplement their print holdings with ebooks. The size of collection varies from a minimal number for most to a larger scale (thousands of volumes) for few libraries. This is expected to gradually increase in the following years. Collection development policies still need to be updated for majority of the libraries to reflect the principles applicable to ebook selection, acquisition and evaluation.

In terms of acquisition, a small percentage of the library budget is already being spent on and allotted to ebooks. Libraries have indicated a strong preference for perpetual access for licence options and pick-and-choose model for selecting titles. Some have also opted for subscription based access to ebooks which has advantages of its own. In the case of consortial purchasing, this strategy still has to be explored for many libraries while a few others have already ventured this type of deal.

Clearly, ebooks provide libraries with many benefits but along with this, come many challenges as well. Enhanced user access, space, cost and time savings, greater security, cost and access to greater content are among the many advantages that motivate libraries to purchase ebooks. On the other hand, cost, restrictive license provisions, lack of standard file format and the necessity for additional devices and infrastructures are considered as the main challenges to integrating this format in the collection.

Provision of ebooks is becoming a trend for academic libraries which is an ideal opportunity to enhance the current collection as well as the users' research experience. However, future research to determine the perspective and level of acceptance among the end users is recommended. Lastly, since there are varying factors to consider in ebook acquisitions, there is a need for libraries to establish a clear collection development strategy to guide them in their decision making process.

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Appendix. eBooks in Philippine Academic Libraries Questionnaire

eBooks in Philippine Academic Libraries

* Required

Name of Institution *

Your answer _____

Type of Institution *

Public

Private

1. Approximately, how many ebooks (purchased) does your library currently have? *

Your answer _____

2. Approximately, what percentage of your collection are ebooks? *

Your answer _____

3. Approximately, how much is your average annual expenditure for ebooks? *

Your answer _____

4. Please select the acquisition models that your Library have used when purchasing ebooks. *

Pick-and-Choose Only

By Collection/Packages Only

Combination - (some are acquired by Pick and Choose and some are By Collection)

Demand Driven or Patron Driven Acquisition

Other: _____

5. Which access models have you chosen when you purchased your ebooks? *

Annual Access (Subscription-based)

Perpetual Access

Combination (i.e., some are purchased on subscription bases and some on perpetual access basis)

Other: _____

6. Has your Library participated in any consortial purchase of ebooks? *

- Yes
 No

7. Is ebook acquisition part of your collection development policy? *

- Yes
 No

8. Which of the following factors do you consider are challenges to ebook acquisitions? Please select your top 5.

- Cost
 Restrictive license provision
 Varying file formats (e.g. epub, pdf, xml, etc)
 DRM (Digital Rights Management)
 Annual recurring payments
 Absence of archiving rights
 Requires ebook reader software
 Requires good internet connection

9. What are your reasons for acquiring ebooks. Please select your top 5. *

- Enhanced user access
 Enhanced book functionality
 Access to more content
 Integration of books/journals on single platform
 Greater security, reduced book loss/damage
 Space savings (e.g. shelf/ storage space)
 Better value-for-money for acquisition budget
 Cost and time savings (e.g. physical handling/ processing)
 Availability of usage statistics from publisher
 Easier cataloguing
 Enhanced collection development/planning

SUBMIT

JoEMLS 註釋 (Notes) 暨參考文獻 (References) 羅馬化英譯說明

2015年1月31日修訂

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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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ISSN 1013-090X



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