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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，改以季刊發行。自1982年9月起易今名，而仍為季刊，每年秋(10月)、冬(翌年1月)、春(4月)與夏季(7月)各出刊一期，合為一卷。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，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). The *JoEMLS* has been a quarterly as well as a new title since September 1982, appearing in Fall, Winter, Spring and Summer issues. The *JoEMLS* is indexed or abstracted in *Index to Chinese Periodicals*, *Chinese Electronic Periodicals Service (CEPS)*, *Ulrich's Periodicals Directory*, *Public Affairs Information Services (PAIS)*, *Library & Information Sciences Abstracts (LISA)*, *Library Literature & Information Science (LLIS)*, *H.W. Wilson Database*, *Directory of Open Access Journal (DOAJ)*, *Library, Information Science & Technology Abstract (LISTA)*, *Scopus*, and *Taiwan Social Sciences Citation Index (TSSCI)*.

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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。

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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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- (2) 典藏版以期刊排印之 PDF 檔為首選；
- (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

In recent years, the *JoEMLS* has regularly announced its rejection rates for each issue. It always shows the *JoEMLS* editor's attitude for the past few years: we do not intend to distinguish whether a journal is "good" or "bad" simply by its rejection rate high or low; on the contrary, we consider it our responsibility to tell the readers there exists the rejection percentages in our journal, that is all. It is a hard job to be an editor of an academic journal, who often teases himself as a match-maker, but not a bridegroom himself. She/he often worries about whether her/his devotion to the journal business is not transparent and open enough to the public. Based on this sort of concept, if we emphasize the "Trust-worthy operations", a kind of audit system for editorial works, other than rejection rate, there should be; for example, the namelists of all reviewers in the last volume issue as a whole, the publication lag (the average time span of delaying effect on publishing), the mean or median number or, the 75% percentile of publication lag, and even the revealing of reviewers' commentaries and the rebuttals from the authors as a method of scholarly communications and publicities, etc. The aforementioned methods are not newly invented or unprecedented, they are used by renowned international journals for years. We believe it takes much more sacrifice in achieving any active tasks with positive purpose. We hope in the future the editorial effectiveness and its managing system can be improved by means of fulfilling the purpose of "Trust-worthy Operations".

Owing to the creativity and perseverance in the past years, the *JoEMLS* has been considered as a benchmark for scholarly journal publishing in Taiwan. Encouraged and advised by many peers and counterparts in this academic field, the editors have strived to carry out the "double blind" review procedures for each article—going through both "review of article form" and "substantial review". The former comprises title, abstract, keywords, author's names, job position, affiliation of organization in Chinese and English, and e-mail address should be verified, and that the theme, length, citations, and referencing style of the article should meet the requirement in the academic scope of this Journal. After the article passed the "form review", the editorial staff will send it to the members of editorial board for their advice and suggestions on its theme. If accepted, it will be sent to the reviewers who were recommended by the editorial board. If there are no candidates suggested by the board members, the candidate of reviewers will be determined by the editors. Each article should be assessed at least by two reviewers for the "substantial review".

The editor and his team handled the basic and minimum “review of article form” only, they do not do any subjective assessment on the theme and substantial contents of any submissions. In this way, arbitrary editorial and blunders could be avoided, editorial efficiency could be reached, and author’s rights could be guaranteed. The assessment on substantial contents should be conducted by our academic peers in this field so that objectiveness and practical suggestions can be achieved. In other words, except the form of an article does not meet our requirements, the editor of this journal will not capriciously reject it before sending it to the board and reviewers for suggestions and assessment. We will definitely respect the author’s rights and the mechanism of peer-review.

The result of “substantial review”, either its contents or detailed items, will be noted and recorded on the “Referee’s Evaluation Form”. The result will include: novelty, significance of the research, clarity of presentation, adequacy of citations, appropriate for *JoEMLS*, and of sufficient interest to publish, etc. The reviewers may offer some suggestions on the format of its citations. As to the questions about the format of citations for reference, the *JoEMLS* has devoted a lot of efforts, trained many staff for citation experts and set up systems related to the format. If the author’s reference format of any article does not meet the standard (requirement), this *Journal* will help the author to improve it. Yet, it is certain that we are facing lots of challenges and hardships in keeping the standard in journal for referencing styles.

This issue (Volume 49, Issue 4) has dealt with 14 articles, including five accepted and nine rejected. The rejection rate is still around 64.3%. The first article is by Pao-Nuan Hsieh (謝寶媛), Ching-Yin Wang (王靜音), Fu-Hsuan Chuang (莊馥瑄) doing research on all articles in the *JoEMLS* in the past 40 years, analysing the characteristics of each one. Another article is about design and practice of journal OASIS by Sinn-Cheng Lin (林信成) and Wen-Yan Huang (黃文彥). Another is about a network analysis among online sociology journals, by Pei-Chun Ko (柯佩均), Ray-May Hsung (熊瑞梅), Ke-Wei Lu (盧科位). Still another is about university librarians’ job satisfaction, job autonomy, and job performance by Yu-Ping Peng (彭于萍). The other is about college students’ preference of environmental ambiance in libraries by Yi-Chu Lin (林詣筑) and Ming-Hsin Chiu (邱銘心). Namely, there are two brilliant and interesting main themes in this issue: the development of scholarly journal; the management of university libraries.

Jeong-Yeou Chiu
JoEMLS Chief Editor

The Profile of the Papers Published on the *Journal of Educational Media & Library Sciences*^Ψ

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Abstract

Research is the important process of knowledge exploration. Domain knowledge development can be improved by using research design and proper statistical methods meticulously as well as clearly and systematically displaying research results. In order to find out the evolving trend of Library and Information Science, its research design and statistical method is a topic worth exploring. By applying bibliometric and content analysis, this study investigates the 1,540 research papers published in the Journal of Educational Media & Library Sciences (JoEMLS) in the last 40 years. According to its history and mission statement, the researchers separate time span from 1970 to 2010 into four period, exploring the features of those published papers, including the type of articles, article languages, topics, structures, research designs and statistical methods. The results show as follow. During period 1, the type of articles are diversities. In addition, Chinese papers are dominate. Moreover, the top 3 categories of research papers are the study of "Library and Information Science"(66%), follows by the "Education"(15%). As for the paper structure, there are 2.73% papers applying ILMRAD and only 8 papers of them applying IMRAD. The most commonly adopted research design is Survey Method, among them, the study of "Library and Information Science" used more often (46.63%). As to the most commonly used statistical method is Descriptive Statistics (60.11%), secondly the T-Test (9.27%).

Keywords: *Research design; Statistical methods; Journal of Educational Media & Library Sciences; Bibliometrics; Content analysis*

^ΨPart of this article had been presented at The International Conference of the 40th Anniversary of *Journal of Educational Media & Library Sciences*, March 7-8, 2011.

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SUMMARY

Research is an important process of knowledge discovery. Knowledge within a discipline is developed and accumulated further by using precise research methods and proper statistical analysis techniques meticulously as well as displaying research results clearly and systematically. Quality research papers play an important role in promoting and sustaining an academic discipline. To find out the evolving trend in the discipline of Library and Information Science, the applications of research methods and statistical analysis techniques turn out to be a topic which is worth discussing. By **applying bibliometrics and content analysis**, this study investigates 1,540 research papers published in the *Journal of Educational Media & Library Sciences (JoEMLS)* in the last 40 years. Based on the history, objectives and evolution of the journal, the researchers divide the years from 1970 to 2010 into four time periods and exam the features of the published papers by the article types, languages, subjects, structures, research methods and statistical analyses.

The results were shown as follows. Period 1 showed the most diverse article types including eleven different ones. There were only three types of articles during Period 2. In Period 3, only the research type of papers was published. During Period 4, seven different article types were found, and it showed a great variety of the articles again.

In terms of article languages, from the very first edition, 818 Chinese papers (53%), 419 English papers (27%), and 303 translation papers (20%) have been published, shows as Figure 1. Period 1 focused on translated papers. During Period 2, the journal turned to invite English papers from international scholars therefore English papers were more than Chinese papers. In Period 3, the number of English papers decreased and Chinese papers dominated in numbers since the Period 4.



Figure 1 Languages Analysis of Research Papers in JoEMLS

In term of subjects, shows as Figure 2, the number of papers related to Library and Information Science(LIS) published in *JoEMLS* has the highest percentage (about 66% among all papers), followed by the ones related to education (15%) over three decades. Looking at the 810 research papers from three periods, the percentage of research papers about LIS has been on the decrease every year: For Period 2, 3 and 4, the numbers were 74.09%, 58.79% and 54.79% respectively. Of the papers related to LIS, the ones about “library services” took up a large part (about 46%) and the fastest growing subjects were “information processing and information industry”.

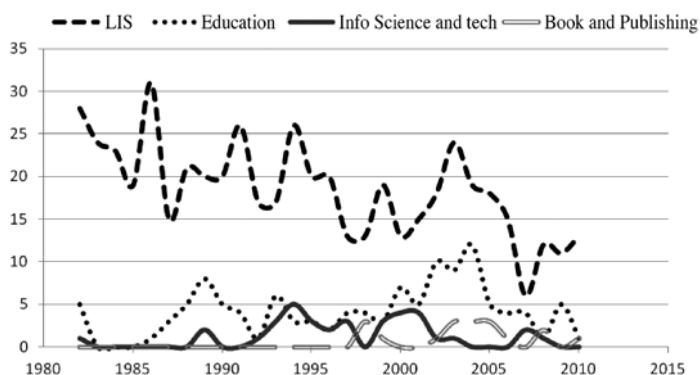


Figure 2 Subject Trends of Research Papers in *JoEMLS*

The average number of pages for papers published in *JoEMLS* went from 4.17 pages in 1970 to 29 pages in 2010. From Period 1 to Period 2, the average number of pages has increased from less than 5 pages to 15 pages. In Period 3, the average research papers were 16 pages. The number of pages has gone up to 20 pages since the Period 4.

As for the structure of papers, of all the research papers published in *JoEMLS*, 42 research papers (2.73%) adopted the ILMRAD structure while only 8 papers (0.52%) adopted the IMRAD. In Period 1, none of IMRAD or ILMRAD were adopted in any papers. In Period 3 and 4, the papers used the ILMRAD more than the IMRAD.

The most commonly used research method is survey, which was used in 149 papers in total. The second most commonly used method was interview. However the number of papers that used the interview method is only half of the number of papers that used the survey method. In addition to the survey and interview methods, the authors from different periods used different methods. Among all the periods, Period 4 accounted for the highest number of research methods. Period 2 contained only 9 papers that used the historical method. There were 46.63% of the “Library and Information Science” papers adopted the survey method. About 12% of the “Education” related papers adopted the survey

method. The “Information Science and Technology” papers used the survey method the most while the interview method is widely used in the “Book and Publishing Research”. Cross analysis of research methods and subject categories in *JoEMLS* shows as table 1.

Table 1 Cross Analysis of Research Methods and Subject Categories in *JoEMLS*

Research method	LIS	Education	Cataloging	Information Science & Technology	Book & Publishing Research	Business	Archive	others	Total
Survey	97	25	1	6	5	2	1	5	142
Interview	40	12		3	7	3		2	67
Content analysis	26	3	1	2	5		1	2	40
Case study	15	2		1	3	3	1		25
Experimental research	5	6			1		1	1	14
Bibliometric	9		5						14
Historical research	8		1						9
Action research	2	3							5
Evaluation	3			1					4
System analysis & modeling	3								3
Ethnography		2							2
Total	208	53	8	13	21	8	4	10	325

The papers published in *JoEMLS* adopted various statistics analysis techniques including descriptive statistics, inferential statistics, single variable analysis and multivariate statistical analysis. The most used analysis technique was quantitative descriptive statistics which was adopted by 214 papers (60.11%). The Chi-square test applied by only 27 papers (7.58%). There were 33 papers (9.27%) used T-test, 30 papers (8.43%) used analysis of variance (ANOVA), only 1 paper used analysis of covariance (ANCOVA), and 24 papers (6.74%) used correlation analysis. There were 8 papers (2.25%) adopted multivariate analysis of variance (MANOVA) and 2 papers considered the covariance and applied multivariate analysis of covariance (MANCOVA). Other multivariate analysis techniques which were occasionally adopted in Period 3 and 4 included factor analysis, discriminant analysis, cluster analysis, and multidimensional scaling, etc. The most adopted statistics analysis techniques in LIS were descriptive statistics, Chi-square test, T-test, analysis of variance (ANOVA) and correlation analysis. Table 2 shows the cross analysis of statistics analysis techniques and subject categories.

The manifestation of LIS’s domain knowledge needs support from the quality of academic papers. The applications of research methods and statistics analysis techniques have crucial influence on the quality of academic papers. Therefore, in order to find out the evolving trends of LIS, its research methods and statistics analysis techniques is a topic worth discussing. Besides, the academic paper’s writings should adopt explicit structures which most frequently consist

Table 2 Cross Analysis of Statistics Analysis Techniques and Subject Categories in *JoEMLS*

Statistics analysis techniques	LIS	Education	Cataloging	Information Science & Technology	Book & Publishing Research	Business	Archive	others	Total
Descriptive statistics	144	34	11	7	9	2	1	6	214
Chi-square test	20	4		2	1				27
T-test	18	11	1	1	1	1			33
ANOVA	18	7		2	2	1			30
MANOVA	5	1		1		1			8
Correlation analysis	18	3	1		1			1	24
Regression analysis	2			1	1				4
Factor analysis	10								10
Cluster analysis	1								1
Discriminant analysis	4								4
Multidimensional scaling	1								1
Total	241	60	13	14	15	5	1	7	356

of IMRAD and ILMRAD. To follow the structures not only helps the researcher elaborate research thoughts and findings, it also helps the readers to know well the research development. Although this study investigates the research papers published in *JoEMLS*, which is the earliest LIS journal adopted by TSSCI and has discreet peer review, the LIS's trends and developments can be found by the analysis of structures, research methods and statistics analysis techniques of *JoEMLS*.

ROMANIZED & TRANSLATED REFERENCES FOR ORIGINAL TEXT

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Design and Implementation of an Information System for Open Access Journals

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Abstract

Based on the model of Open Archival Information System (OAIS) and the Directory of Open Access Journals (DOAJ), this study designs and implements an information system for integrating directories of open access (OA) journals. The issues examined in the study include metadata formats, dissemination of information package, method of connecting systems across different platforms, and data exchange protocols. The proposed system can benefit the system developer in designing and developing OA systems on the web which could be connected to the DOAJ platform with ease. Sharing and using of OA journals would thus be greatly increased as a result. The online system of the Journal of Educational Media and Library Sciences (JoEMLS) is used in the study as the environment for implementing the proposed model, originating and modifying from the OAIS. By analyzing the four main user types of JoEMLS system, we develop four distinct subsystems for ingesting, archiving, managing, and accessing JoEMLS. The result of the research project is that the integrated system can not only work successfully with the original JoEMLS system but also can be connected to the platform of DOAJ seamlessly.

Keywords: *Open Access; Journal management system; OAIS; Metadata; DOAJ*

SUMMARY

Open Access (OA) is an emerging model of scholarly publishing in recent years. With Open Access, scholarly work can be retrieved and used freely. Meanwhile, libraries can also expand their free online collections of scholarly journals. In order to enhance the visibility, the use, and the impact of OA journals, the library of Lund University in Sweden created the DOAJ (Directory of Open Access Journals) as an integrated platform for high-quality and peer-reviewed OA journals from all over the world freely available for scholars.

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From the viewpoint of system designers, we believe that the design and implementation of a journal information system should be built based on an open infrastructure so that the OA journals that are dispersed otherwise can be integrated and accessed easily. Theoretically, the design would be better if it can match up with the Reference Model by OAI (Open Archival Information System), which is approved and used globally. However, not many OA journal information systems are designed this way; thus it becomes difficult to share and disseminate resources and information across different platforms. Therefore, for the purpose of connecting dispersed OA journals, this study aims to propose an integrated model of OA journal information system that is based on OAI reference model and on the platform of DOAJ. Issues concerning the format of metadata, transmission of information packets, methods of integrating systems, and guidelines for protocols are addressed in order to design an journal information system that could be easily connected to DOAJ platform thus increase the use and dissemination of OA journals. In order to verify the effectiveness of the proposed system, the study adopts *JoEMLS* as the working environment for an OAI-based journal information system.

The key features of the OAI Reference Model lie in the nature of open access and resource sharing across different archival systems. Such a model allows the information producer to interact with the information consumer, and vice versa. Both of the two parties can be developed based on the OAI Reference Model, such as the OA journal information system discussed in this study. If such an OA journal information system is to design based on the OAI Reference Model for the purpose of integration, each connecting system needs to have six major entities within the system, which are: Ingestion, Archival Storage, Data Management, Administration, Preservation Planning and Access. In addition, the information packages across systems should be SIP (Submission Information Package), AIP (Archival Information Package), and DIP (Dissemination Information Package) for different purposes. In such a model, all OA journal information systems can deliver information using the same protocol. However, the OAI Reference Model does not provide interface specification for exchanging data; it takes an open attitude and leaves the specifications for system developers. Thus, the rather feasible solution is to integrate all the existing agreements and standards, such as OAI-PMH (Open Archives Initiative Protocol for Metadata Harvesting), SOAP (Simple Object Access Protocol), OpenURL, SRU/SRW (Search and Retrieve URL/ Search and Retrieve Web) for the delivery of the digital catalogue of OA journals or the of full text documents.

The goal of DOAJ platform is to include all OA journals around the world. It has specifications like DOAJ XML Schema as the standard for exchanging

metadata on its platform. From the perspective of OAIS, the design of DOAJ platform fulfills the structure of an open access archival system because (1) for the input of information, the SIP is submitted by following the metadata specification made by DOAJ. It is parsed by the Ingestion Module, and saved in the Archival Storage. This process integrates the metadata of each OA journal into the DOAJ database; (2) for the output of information, the Access Module follows the OAI-PMH protocol and functions as the data provider. It also outputs the DIP with the metadata that matches the specifications of Dublin Core or the format of DOAJ Article. Through the process, users in various digital libraries can access and retrieve the needed information.

This research used the *JoEMLS* as the working environment and developed an OA journal information system based on the OAIS Reference Model. In 2006 the *JoEMLS* became the first journal in Taiwan accepted by DOAJ. However, the early version of *JoEMLS* website did not provide the needed connection to the DOAJ platform, let alone providing various metadata formats for switching or supporting the globally approved data exchange protocol like OAI-PMH. For the purpose of improving the connectability across systems and increasing the access and the use of the metadata as well as the full text of *JoEMLS*, this research was set out to meet the needs of redesign and to implement the journal information system of *JoEMLS* based on the OAIS Reference Model. Issues such as metadata, data package transmission, methods of connecting system, and guidelines for data exchange protocol were all taken into consideration.

Based on OAIS framework, the research team divided *JoEMLS* OA system into four sub-systems based on different functions:

1. Archival sub-system: The study used Apache servers and MySQL database to save information such as metadata, e-content of the full text, back-ups, etc.
2. Ingestion sub-system: External data was imported and saved by the Ingestion Module.
3. Management sub-system: Two modules were designed, including (1) Data Management Module for adding, modifying, and deleting information; and (2) Authorization Management Module for controlling the users' account and access.
4. Access sub-system: Six modules were designed, including (1) General Search Module in which users can search and read the metadata as well as the full text of the articles; advanced search was also provided; (2) RSS Module, providing users the service of subscribing for latest articles; (3) Citation Format Module, which offered the main citation formats; (4) Open Search Module, which was offered for those who support

open search protocol through XML definitions; (5) Metadata Transform Module, which functioned as a translator among different metadata formats and provides single or mass output of appropriate metadata; and (6) OAI-PMH Data Provider Module, providing metadata based on OAI-PMH protocol, and by doing this the system qualifies as an OA data provider.

After completing each module, the research team integrated, tested, implemented, and connected each sub-system to the DOAJ platform. Since 2009 this system has been officially online for three years with great success. By examining the system statistics, it is estimated that the system has more than 60,000 visits in the past three years, which can be accounted for more than 290,000 page views. In this research we only implemented the data exchange protocols of OAI-PMH and Open Search. For future research projects, the team plans to work on other protocols such as SRU, SOAP, and OpenURL. Also, more research can be done in the area of adopting XML with data exchange protocols to further develop web service for designing various applications. The ever more popular smart phones have also attracted much research attention. Thus, the research team also considers providing a smart phone version for the journal management system in the future. On the other hand, the research team has completed recording the metadata of all the back issues of *JoEMLS*. Therefore, more analysis can be done to understand the development of the multiple disciplines covered by *JoEMLS*. Further analysis, research of data mining, content analysis, and authorship are among the many possibilities of using the system. Lastly, the tools for analyzing system log such as Google Analytics and AWStats are installed in the system and can be useful for studying user behavior. Researchers who are interested in citation analysis can use the citation database in the system for bibliometrics related studies.

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A Network Analysis of Inter-Journal Citations of Sociology Journals in Taiwan

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Abstract

This study explores structures of citation networks of Taiwan sociology journals, conceiving these citation networks as the citation behavior of inter-sociology journals in the professional sociology community. We investigate the structural changes in numbers and density of citations and formations of subgroups over time. The data set covers 20 Taiwan sociology journals between 2001 and 2006 and traces their citations of sociology journals from 1993 to 2006. We demonstrate our results by visualizing the citation networks and then employing structural equivalence, blockmodeling and positional and role analysis to analyze different blocks and roles. This research indicates two major findings: 1. The centrality of core professional sociology journals in the citation networks has been rising over time. 2. The primary position is composed of core professional sociology journals. Additionally, the journals of social work and social welfare cite each other within their own subfields.

Keywords: Social network analysis; Blockmodeling; Citation networks; Sociology journals

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SUMMARY

Introduction

Within East Asia, China, Japan and South Korea have been relying on objective indicators, such as the SCI (Social Science Index) to evaluate the performance of their research communities (Kim, Park, & Thelwall, 2006; Negishi, Sun, & Shigi, 2004; Park, 2008; Zhou, & Leydesdorff, 2007). Citations are a key dimension in the evaluation process, as they can be regarded as an indicator of the importance of research. Taiwan, like other East Asian countries, also relies on citation measures. In fact, the Taiwan government has gone so far as to introduce the Taiwan Social Science Citation Index (TSSCI), in which citations for Chinese-language social science articles are tracked (National Science Council, 2000).

This creates an opportunity to investigate changes in the local scientific community through academic journals in East Asia. In library and information sciences, the traditional approach is to improve citation measurements in order to evaluate the performance of journals and individual scientists (Garfield, 1955; Hargens, & Schuman, 1990; Leydesdorff, 2007; Price, 1965). For sociologists, on the other hand, mapping the overall structures formed through individual researchers' informal and formal communications and organizational collaboration is disproportionally addressed (Breiger, 1976; Burt, 1978; Crane, 1969, 1972).

Our study is in line with the sociological approach, especially using organizational sociology to project the structuration process through inter-organizational competition. "Structuration", as proposed by DiMaggio and Powell (1983), explains a process in which organizations gradually have higher instances of cooperation with other organizations to cope with increasing uncertainty in one field. Moreover, an organization may evolve into a hierarchical structure in which researchers will observe different patterns. Thus, in the process of structuration, these two-fold dimensions can be seen: increasing inter-organizational interaction and the formation of hierarchy.

As there are few empirical studies investigating the changes in Taiwanese academic journals over time, our study intends to answer two research questions: (1) What is the distribution of inter-journal citation networks over time? (2) What are the hierarchical positions of journals over time?

We used inter-journal citation data from the TSSCI, which contains citations by sociology journals between 2001 and 2006, of sociology journals published between 1993 and 2004. Social network analysis is applied to visualize the overall networks at different time points and to differentiate the position of journals.

Literature Review

DiMaggio and Powell (1983) suggest the investigation of structuration in modern organizations in two dimensions. One is to focus on the frequency of interaction between organizations. Findings on patents in the semi-conductor industry and on drug innovation in the pharmaceutical industry show that increasing inter-organization ties, such as co-citations of patents and collaboration projects, help companies advance their competitive capability (Mina, 2009; Podolny, Stuart, & Hannan, 1996).

The other dimension is to detect existing hierarchical structures. Several studies categorize scientists' communication and journal citations into several categories, i.e. primary subgroups, follower subgroups, and isolation subgroups, based on different behaviors in terms of sending and receiving ties. Breiger (1976) and Burt (1978) both found that scientists in primary subgroups are leading scholars and tend to interact within the group. On the other hand, scientists in follower subgroups are less prestigious, and a high number of contacts are made by this group to scientists in the primary groups. Isolation subgroups consist of scientists who hardly interact with each other or with other subgroups. Doreian and Fararo (1985), in analyzing the hierarchical structures of American sociology journals over time, concluded that comprehensive sociology journals gradually became the primary subgroup in the core of inter-journal citation networks. In sum, the various findings on hierarchical structures help to explain the differentiation among scientists and journals.

Governmental reports have tracked the changes in Taiwanese sociology journals over the last decade. Some journals have ceased publication and others have merged since the TSSI was introduced (Chang, Hwang, Yu, & Lo, 2002; Hsung, Tu, Song, & Huang, 2007). However, no empirical studies have mapped and analyzed the overall structure over time. Based on the two dimensions mentioned earlier, we expect that the number of inter-journal citations will be increasing, and that citations will be denser over time. Moreover, we expect that a clear hierarchy will be identified. A comparison will then be made between subgroups and the types of sociology journals to interpret the hierarchy.

Method

Data

We used the database established for the evaluation of academic journals by the National Science Council (Hsung et al., 2007). This database includes 20 sociological, social work, and social welfare journals published in the Chinese language between 2001 and 2006 (Table 1) and contains citations of articles published between 1993 and 2004.

Table 1 Sociological and Social work Journals

Name	Abbreviation
<i>Journal of Social Sciences and Philosophy</i>	<i>JSSP</i>
<i>Journal of Population Studies</i>	<i>JPS</i>
<i>Taiwanese Journal of Sociology</i>	<i>TJS</i>
<i>Taiwan: A Radical Quarterly in Social Studies</i>	<i>TRQSS</i>
<i>Taiwanese Sociology</i>	<i>TS</i>
<i>Soochow Journal of Sociology</i>	<i>SJS</i>
<i>Thought and Words</i>	<i>TW</i>
<i>The NCCU Journal of Sociology</i>	<i>NCJS</i>
<i>Journal for Philosophic Study of Public Affairs</i>	<i>JPSPA</i>
<i>Formosan Education and Society</i>	<i>FES</i>
<i>Taiwanese Journal of Educational Sociology</i>	<i>TJES</i>
<i>Journal of Women's and Gender Studies</i>	<i>JWGS</i>
<i>Journal of Cyber Culture and Information Society</i>	<i>JCCIS</i>
<i>Survey Research</i>	<i>SR</i>
<i>Social Policy and Social Work</i>	<i>SPSW</i>
<i>Soochow Journal of Social Work</i>	<i>SJSW</i>
<i>NTU Social Work Review</i>	<i>NTUSW</i>
<i>Taiwanese Social Work</i>	<i>TSW</i>
<i>Taiwanese Journal of Social Welfare</i>	<i>TJSW</i>
<i>Formosa Journal of Mental Health</i>	<i>FJMH</i>

Method and Measurement

Visualization

UCINET (version 6.17) is used for network visualizations (Borgatti, Everett, & Freeman, 2002).

Degree centrality

Degree centrality calculates the frequencies of nodes (Freeman, 1979). We standardized degree centrality for comparisons. Centralization calculates the density of an overall network (Wasserman, & Faust, 1994).

Positional and role analysis

In order to identify different hierarchical positions, we relied on positional and role analysis (Wasserman, & Faust, 1994). These analyses use structural equivalence and blockmodel techniques to separate journals and group them into several subgroups. We used CONCOR (Convergence of iterated Correlations) in UCINET for this task.

Furthermore, we identified roles for subgroups based on the analogy of scientists' subgroups: primary group, broker, sycophant, and isolation (Burt, 1978). Nodes in the primary subgroup contain a high degree of citing within the subgroup, but a low degree of citing other subgroups. The broker subgroup has a high degree of citing other subgroups, and citations are evenly distributed. The sycophant subgroup has a high degree of citing other subgroups, but a low degree

of citing within the subgroup, and a low degree of receiving citations.¹ The isolation subgroup has a low degree of citing and receiving citations.

Results

Increasing Degree Centrality and Centralization of Inter-journal Citations

From the visualizations (Figure 1 to Figure 3), we see an increasing number of citations, in which specific journals receive more citations over time. Table 2 gives us an overview of degree centrality and centralization. The changes are evident: In the first time interval, 1993 -1996, the highest degree centrality is 26.3 (Journal “JSSP”). In the third time interval, 2001- 2004, Journal “TS” has the highest degree centrality with 46.4. Overall, the citation networks move toward a denser network when we look at centralization. The increase is from 22.43% in the first time interval to 40.99% in the third time interval.

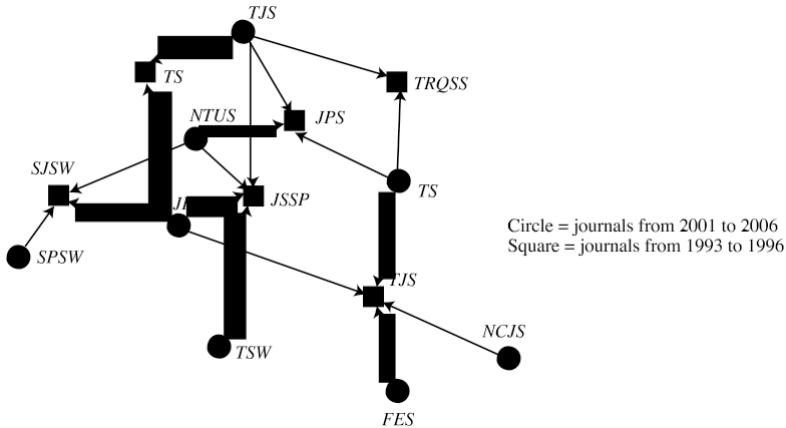


Figure 1 Citation Networks: 2001-2006 Journals Citing 1993-1996 Journals

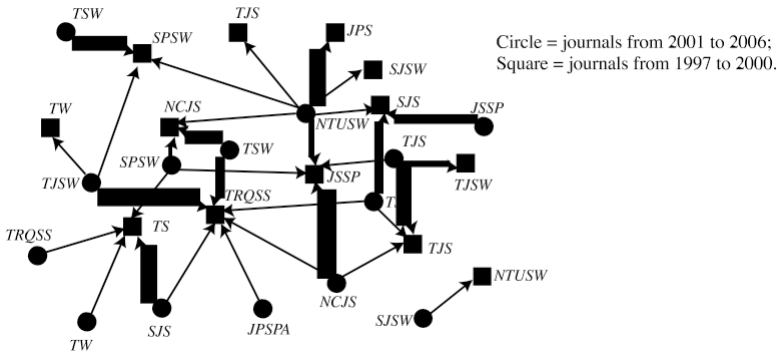


Figure 2 Citation Networks: 2001-2006 Journals Citing 1997-2000 Journals

¹ We replace the term “sycophant subgroups” to “follower subgroups” in the results and conclusions because the former has a negative meaning in Chinese and the latter keeps the definition by Burt (1978) while maintaining a neutral meaning for the observed subgroups.

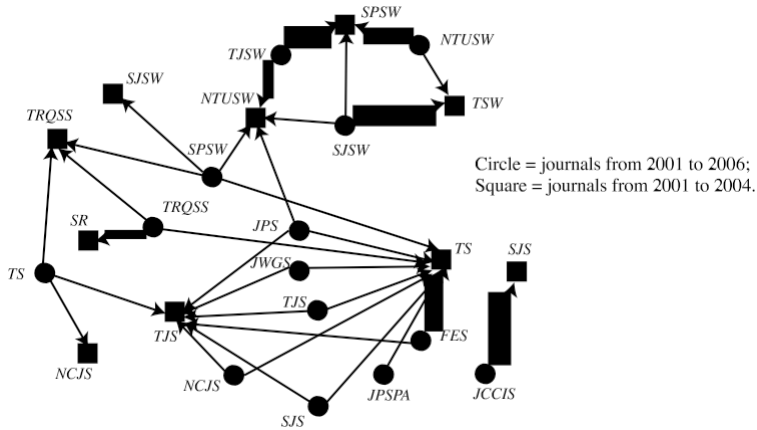


Figure 3 Citation Networks: 2001-2006 Journals Citing 2001-2004 Journals

Table 2 Citations and Degree Centrality for Sociology Journals from 1993-1996, 1997-2000, and 2001-2004

Journals	1993-1996		1997-2000		2001-2004	
	Number of citations received	Degree centrality	Number of citations received	Degree centrality	Number of citations received	Degree centrality
<i>JPS</i>	3	15.8	1	5.3	0	0.0
<i>JSSP</i>	5	26.3	5	26.3	0	0.0
<i>TJS</i>	4	21.1	3	15.8	7	36.8
<i>TRQSS</i>	2	10.5	6	31.6	3	15.8
<i>TS *</i>	2	10.5	6	31.6	9	47.4
<i>TJES *</i>	0	0.0	0	0.0	0	0.0
<i>SJS</i>	0	0.0	4	21.1	1	5.3
<i>TW</i>	0	0.0	1	5.3	0	0.0
<i>NCJS</i>	0	0.0	3	15.8	1	5.3
<i>JPSPA*</i>	0	0.0	0	0.0	0	0.0
<i>FES *</i>	0	0.0	0	0.0	0	0.0
<i>JWGS</i>	0	0.0	0	0.0	0	0.0
<i>JCCIS *</i>	0	0.0	0	0.0	0	0.0
<i>SR</i>	0	0.0	0	0.0	1	5.3
<i>SPSW</i>	0	0.0	3	15.8	3	15.8
<i>SJSW</i>	3	15.8	1	5.3	1	5.3
<i>NTUSW *</i>	0	0.0	1	5.3	4	21.1
<i>TJSW *</i>	0	0.0	1	5.3	0	0.0
<i>TSW</i>	0	0.0	1	5.3	2	10.5
<i>FJMH</i>	0	0.0	0	0.0	0	0.0
Centrality	22.438%		23.269%		40.997%	

*Journal not published before 1993.

Differentiation of Subfields in Inter-Journal Citation Networks

Figure 4 shows the citation networks of four subgroups by image matrix and the stratification among them. The {*SR, TJS* and *TS*} subgroup is the primary

subgroup, while the {*FES, JPS, JWGS, JPSPA, NCJS, SJS* and *TRQSS*} subgroup is the follower subgroup. Compared to these first two groups, the other two groups are more isolated: the {*NTUSW, SJSW, SPSW, TJSW* and *TSW*} subgroup has self-citations and no interaction with other subgroups, and the {*FJMH, JCCIS, JSSP, TJES*, and *TW*} subgroup has no self-citations or interaction.

Among the primary subgroup, two core professional sociology journals, “*TS*” and “*TJS*”, have the highest degree of centrality from 2001 to 2004, which means that these two journals are ranked in the same prestigious position. These two journals are in the leading position in terms of citation networks. Journals in the follower subgroup include core professional sociology journals, inter-university or inter-institute journals, and synthesis journals. These two subgroups, primarily sociology journals, share the majority of citations. We also find that the isolation subgroup {*NTUSW, SJSW, SPSW, TJSW* and *TSW*} is composed of social work and social welfare journals. It does not have relevant interaction with sociology subgroups. Therefore, we conclude that a hierarchical structure exists in which there is a distinct differentiation between sociology and social work and social welfare.

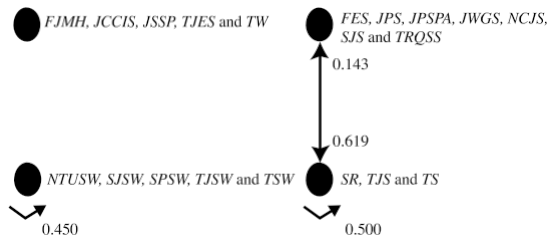


Figure 4 Image Matrix for Sociology Journals between 2001 and 2004 Based on Citations from 1993 to 2006

Conclusions

We have found that degree centrality for sociology journals increases over time. Two core professional sociology journals have attained leading positions, receiving frequent citations, while other journals are followers in terms of citing or being isolated. Moreover, social work and social welfare journals are identified as an independent subfield in the structure.

Further research in combination with policy-related data would be helpful in answering to what extent science policy impacts citation networks. Podolny’s (1993) analyses of “status signals” demonstrated that when a field starts ranking organizations, consumers perceive the rankings to reflect the reliability of organizations and choose those organizations that are more highly ranked. As science policy in recent years has addressed the issues of journal evaluations, a similar status signal effect is applicable to citation networks. Further, the “Matthew

effect” reminds us to track whether policy making leads to a disproportional citation distribution.

Finally, we call for long-term data collection of Chinese journal citation networks. Our study is limited to journals between 2001 and 2006. Longitudinal data would enrich empirical studies of Taiwan’s sociology development.

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The Relationship between Job Satisfaction, Job Autonomy and Job Performance in University Librarians

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Abstract

Shortage of librarians is the biggest management challenge for university libraries in Taiwan. University libraries require librarians to continuously improve their skills to keep up with the changing academic environment and to meet customers' needs. Using structural equation modeling (SEM), this study examines the relationship between job satisfaction and job performance at facet level for university librarians in Taiwan. Results indicated that job satisfaction is positively related to job performance. Findings also indicated that job autonomy moderates this relationship. The study also used competing statistical models and difference analysis. Finally, the study provides management recommendations for the librarianship profession.

Keywords: *Job satisfaction; Job autonomy; Job performance; Contextual performance; Task performance*

SUMMARY

Foreword

Facing a shortage in manpower, managers of university libraries need to encourage staff to upgrade their skills and take on additional tasks in order to adapt to a changing environment and improve the organizational performance and service quality of academic libraries. This study focuses on the relationship between job satisfaction and job performance for librarians and the purposes of the study are as follows:

- (1) To use structural equation modeling to examine the relationship between job satisfaction and job performance at facet level for university librarians in Taiwan.
- (2) To examine the effect of job autonomy on the aforementioned relationship (1).

Literature Review

Job satisfaction is defined as employees' psychological and physical satisfaction toward their working environment (Hoppock, 1935). Job performance, including contextual and task performance, refers to employees' individual behaviors, which are helpful for achieving organizational goals. Job autonomy refers to the ability of staff to manage their work schedule independently and make decisions regarding the methods they use to perform their duties (Hackman & Oldham, 1975).

Research Methodology

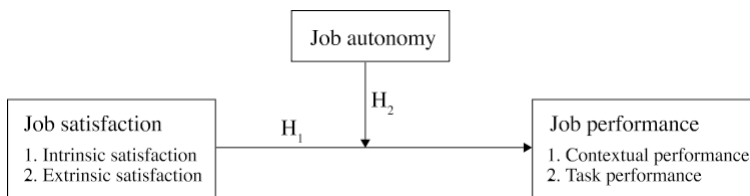


Figure 1 Conceptual framework

Questionnaires were used in this study and all participants were university librarians. The response rate was 70.32%. Data analyses included narrative statistics, reliability and validity analysis, and structural equation modeling (SEM).

Research hypotheses:

H1: University librarians' job satisfaction is positively related to job performance.

H2: Job autonomy mediates the relationship between job satisfaction and performance.

Results and Analysis

The majority of librarians were married, female, 31-40 years of age, and college/ university graduates. Tests on NCI(χ^2/df) \cdot NFI \cdot CFI indicated that the test model fit within the acceptable range. The effect of the interaction between job satisfaction and job autonomy on job performance was found to be significant.

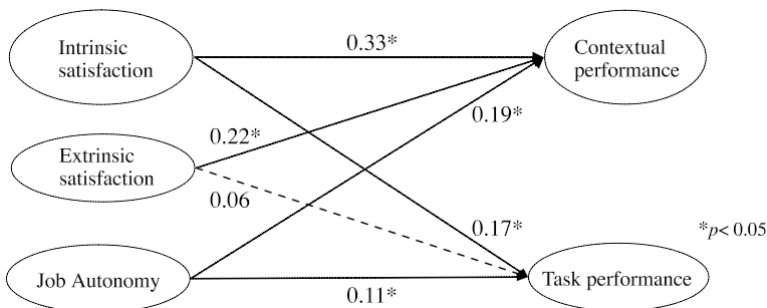


Figure 2 Empirical Analysis of the main model

Table 1 Moderating effect of Job Autonomy

Path relationships	Standardized structural coefficients (<i>t</i> value) $\Delta\chi^2_{(1)}$		Conclusion
	High Job Autonomy	Low Job Autonomy	
Intrinsic satisfaction → contextual performance	0.55 (9.33)	0.23 (3.99)	11.99* significant
Intrinsic satisfaction → task performance	0.25 (4.10)	0.13 (2.19)	4.65* significant
Extrinsic satisfaction → contextual performance	0.27 (4.75)	0.17 (2.93)	6.71* significant
Extrinsic satisfaction → task performance	0.15 (2.45)	-0.01(-0.09)	5.44* significant

Note: * $p < 0.05$

The theoretical model was a concise and appropriate framework and statistically different from the competition models: I、II、III of $\Delta\chi^2$ (Δdf)

Table 2 Comparison between the Theoretical Model and the Competition Models

	Evaluation indicator	Evaluation criteria	Theoretical model	Competition model I	Competition model II	Competition model III
Absolute goodness indicator	χ^2 value	Not significant	1071.70	12765.84	3051.80	10583.83
	GFI	>0.90	0.89	0.41	0.74	0.45
	AGFI	>0.90	0.87	0.32	0.70	0.37
	SRMR	<0.05	0.05	0.22	0.11	0.19
	RMSEA	<0.08	0.05	0.23	0.11	0.22
Relative goodness indicator	NFI	>0.90	0.98	0.84	0.95	0.87
	NNFI	>0.90	0.99	0.83	0.95	0.86
	CFI	>0.90	0.99	0.84	0.96	0.87
	RFI	>0.90	0.98	0.82	0.82	0.82
Relative goodness indicator	PNFI	>0.50	0.90	0.78	0.78	0.78
	PGFI	>0.50	0.77	0.36	0.36	0.39
	NCI (χ^2/df)	2~3	2.68	31.60	7.59	26.26
$\Delta\chi^2$ (Δdf)	significant	--	11694.14(4) *	1980.10(2) *	9512.13(3) *	

Note: * $p < 0.05$

Eight characteristics were used as independent variables with job satisfaction/performance/autonomy as the dependent variables.

Table 3 Characteristics of librarians for difference analysis

Background variables	category	Research variables									
		Intrinsic satisfaction		Extrinsic satisfaction		Job autonomy		Task performance		Contextual performance	
		mean	<i>t</i> value/ F value	mean	<i>t</i> value/ F value	mean	<i>t</i> value/ F value	mean	<i>t</i> value/ F value	mean	<i>t</i> value/ F value
Gender	Male	5.457	1.607	5.060	1.636	5.330	1.881	5.827	1.765	5.571	1.572
	female	5.321		4.860		5.123		5.633		5.404	
Age (years)	21-30	5.244	3.193	4.924	3.432*	5.024	2.404	5.855	6.422*	5.569	4.622*
	31-40	5.284		4.767		5.123		5.706		5.437	
	41-50	5.392		4.860		5.168		5.611		5.445	
	>51	5.534		5.210		5.388		5.266		5.084	

Marital status	Unmarried	5.289	1.292	4.910	0.053	5.052	3.536	5.777	3.287*	5.540	3.276*
	Married	5.382		4.880		5.250		5.568		5.334	
	Other	5.531		4.875		4.750		5.450		5.502	
Education level	< High school	5.152	1.140	5.068	1.404	4.833	5.955*	5.200	2.837	5.231	0.666
	College graduates	5.319		4.825		5.074		5.644		5.449	
	Post-graduates	5.389		4.973		5.357		5.734		5.392	
Job features	Customer service	5.326	3.841*	4.858	6.425*	5.082	1.461	5.704	0.649	5.408	0.182
	Technical service	5.268		4.771		5.160		5.611		5.448	
	Both	5.508		5.213		5.274		5.604		5.387	
Public/private	Public	5.357	0.402	5.056	3.125*	5.182	0.573	5.568	-1.719	5.394	-0.572
	Private	5.331		4.771		5.135		5.711		5.440	
Type of tertiary institution	University	5.314	-1.189	4.889	-0.048	5.145	-0.319	5.569	-2.738*	5.387	-1.155
	Technical college	5.393		4.893		5.172		5.804		5.483	
Work experience	5 years & below	5.285	1.980	4.976	1.468	5.045	3.562*	5.637	0.046	5.418	0.143
	6-10 years	5.311		4.785		5.113		5.668		5.397	
	>11 years	5.427		4.899		5.300		5.656		5.449	

Note: * $p < 0.05$

Librarians in public universities had higher extrinsic satisfaction than their private university colleagues; those 51 years of age and older had higher extrinsic satisfaction than those between 31 and 40 years old. Librarians in technical colleges had a higher task performance than those who work in general universities and colleges. Unmarried librarians had a higher task performance than married ones. With regards to job autonomy, librarians with a post-graduate education were more autonomous than those without; and librarians with more than 11 years of work experience had higher autonomy than those with 5 years of work experience or less.

Conclusion

This study showed that university librarians' job satisfaction is positively related to job performance and is moderated by job autonomy. These findings suggest that to achieve higher job performance, managers should use strategies to motivate librarians and promote intrinsic satisfaction. Work flows can also be redesigned to allow appropriately qualified librarians to increase their job autonomy. The work environment should foster a strong concept of job performance. Follow-up studies could consider other variables which may affect job performance in order to improve the explanatory power of the model.

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A Study of College Students' Preference of Servicescape in Academic Libraries

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Abstract

With the passage of time, library services and architecture change from collection-centered to user-centered. While technology greatly changes users' channels of acquiring and preferences of using information, users consistently demand the physical library space, even with the decline of the usage rates. Related research indicated that in addition to the services and collections, the design and ambiance of the servicescape will also affect the user intent and attitude toward libraries' physical space. With this regard, this study aims to understand from the users' perspective of the way that servicescape and ambiance should be designed. This study used "Photo-elicitation" as its data collection method, which utilized the photographs taken by respondents as a tool for in-depth interview. Photo-elicitation is believed to have the ability to narrow the gap between the respondents and the researchers, while helping to embody the abstract concepts. It is hoped that by adopting this method, respondents can be guided to clearly describe their preference of servicescape in academic library setting. Nine college students were interviewed and a total of 213 photographs were solicited and used as data source. This study confirms that college students are more sensitive to the visual aspect of servicescape design. The functional aspect of the servicescape is most valued, while the aesthetic aspect creates better service experience. Customer service attitude and library's management approach are two critical factors that college students valued most regarding the aspect of social interaction. In addition to exploring college students' preference of servicescape, this study also attempts to construct a framework that serves as guidance for designing and evaluating servicescape in academic libraries.

Keywords: Academic libraries; Servicescape; Ambiance; Photo elicitation

SUMMARY

With the passing of time and advancement of technology, library services and architecture have moved from being collection-centered to user-centered.

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While technology has greatly changed users' methods of acquiring and preferences for using information, the demand for a physical library space remains, even with the decline in usage. Related research indicates that in addition to the services and collections, the design and ambiance of the servicescape will also affect user intent and attitude towards libraries' physical space. It is in this regard that this study proposes to understand, from a user perspective, the way that library servicescape and atmosphere should be created. More specifically, this study aimed to achieve two research objectives: (1) understand the perception, design, and social interaction dimensions of servicescape that users prefer in academic libraries; and (2) explore the nature and definition of servicescape in academic libraries from a user perspective.

Three themes were reviewed in the literature: servicescape and its impact on users (or customers); the design of servicescapes; and the importance of servicescape to library users. The review drew upon a range of published literature in the areas of librarianship, business and management, and design. In this study, servicescape is conceptualized as a type of interaction between customers and service providers within a particular environment. It is the perceptual, design, and social nature of the environment that may impact how customers experience the service. The design of a servicescape in a library can be achieved through physical enhancement, facilities and furniture, functionality, and aesthetics. Understanding the servicescape of academic libraries is critical to the library community. Not only does it reveal the multi-faceted role of a library as a place, but it also identifies the possibilities that libraries represent in the lives of their users.

This study used "Photo-elicitation" as its data collection method, which utilizes the photographs taken by respondents as a tool for in-depth interview. Photo-elicitation is considered a method of visual research, and is believed to have the ability to bridge the gap between research participants and researchers, while helping to embody abstract concepts. By adopting this method, it is hoped that research participants can be guided to clearly describe their preference of servicescape in an academic library setting.

Nine college students were sampled into this study based on three criteria: (1) Full-time status: were full-time undergraduate students in colleges or university at the time of data collection; (2) Frequent user: used any of the library services in the library at least three times a week; (3) Serious user: stayed in the library at least two hours for each session of library use. Before data collection began, a pilot study was conducted to ensure the clarity, reliability, and validity of the data collection plan, including the instructions on what to take pictures of, and the questions for interview. Three undergraduate students participated in the

pilot study and the results informed minor modifications in data collection. The modifications were as follows: the number of photos submitted was increased from 5 to 15; and the photo-taking stage was shortened from 14 days to 10 days to prevent errors from memory loss.

The research required a three-stage data collection process. First, participants were introduced to the research objectives and the research participation activities. This stage was called the “preparation stage”. In the second stage, participants went to take photos of “corners of academic libraries” that they were most impressed or satisfied with, or that they most disliked or were dissatisfied with. Each participant was required to submit at least 15 photographs to the researchers for the purpose of interview and clarification but was allowed to take as many photographs as they wanted. This stage was called the “photo-taking stage”. In the third stage, researchers met with each participant for a semi-structured interview, going through each submitted photograph to elicit more information regarding the concepts, conceptualization, and preference for servicescape in academic libraries. Each interview took one to one and a half hours. This stage was called the “photo elicitation interview”. Completion of all three stages of data collection required 10-14 days.

After data collection was completed, 213 photographs taken by the participants were solicited and interview conversations were transcribed and analyzed based on the three themes of servicescape as identified from the literature: perception, design, and social interaction dimensions. Findings suggested the nature and definition of each dimension in detail. The perception dimension related to the multitude of human senses in sight, hearing, smell, and touch. The design dimension illustrated the functionality and aesthetic aspects of the library facilities and space. The social dimension demonstrated the interaction with servicescape. This dimension encompassed personal space, behavior, and library administration and management.

In addition to exploring college students’ preference of servicescape, this study also attempted to construct a framework that serves as guidance for designing and evaluating servicescape in academic libraries. Users come to libraries and interact with library services for different purposes and their service experience is impacted by the core services, servicescape, and personnel. This study identified five user-oriented definitions reflecting the meaning of servicescape in academic libraries. Diversity related to the multiple roles of academic libraries in students’ lives. Functionality focused on the services and functions the library provided. Social-orientedness related to the library as part of one’s memory of college life. Free-of-Charge focused on the “affordable fashion” nature of library services, suggesting that the low-cost

services provided in a comfortable environment is the strongest advantage libraries have compared to other types of information services. Popularization of library services suggested that “libraries providing services” was a declarative act, and with this idea in mind, “having services provided” was more important than “providing better services”.

In conclusion, this study confirms that college students are more attracted to the visual aspects of servicescape design compared to the other three senses. The functional aspect of the servicescape also had a great impact on college students, especially the facilities and the furniture, considering their primary purpose in visiting the library is academic. At the same time, the aesthetic aspect creates a better service experience and facilitates a positive state of mind. Attitude towards customer service and the library's management approach were the two factors that college students valued most with regard to the social interaction aspect.

There are three major implications of these findings for servicescape design in academic libraries. First, a balance between functionality and aesthetics may improve user satisfaction and usage rate. Second, direct communication between libraries and users is an effective strategy to understand users and find solutions to minimize misunderstanding. Third, incorporation of transparency in the design of personal space may improve user privacy while enabling fluidity of light.

Three directions for further research are suggested based on the findings of this study. In addition to library users, librarians and other support staff are also primary users of the library space and facilities. Further research may utilize the same approach, photo-elicitation, to investigate their preferences for the design of their work environment. In combining the perceptions of both the providers and users of the service, a whole picture of how library space should be designed can be envisioned. This study interviewed 9 college students and a total of 213 photos were solicited. To improve the reliability of the results and distinguish the significant dimensions, larger studies need to be conducted. Lastly, as photo-elicitation proves to be an effective method for uncovering the underlying meaning of servicescape and space from the users' perspective, it may be a valuable tool to study other types of libraries, such as public or school libraries, for rethinking the connection between libraries and their users.

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* 本中文範例主要取自張保隆、謝寶媛(2006)。學術論文寫作APA規範。台北市：華泰文化。特此致謝。英文範例以 *Publication Manual of the American Psychological Association* (6th ed.) 為準，範例若不足，請逕參閱該二書。採用本刊格式時，亦請留意年代(西元年號)、出版品(標楷體)有別於其餘字體(新細明體)之特別要求；以及期刊論文若同時具有卷期，只須著錄出版年，不須登錄月份，但若僅有卷而無期數，則須同時著錄出版年與出版月份(或季節)。

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參考文獻呈現方式：

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範例 2
邱均平[Jun-Ping, Qiu]，「網路信息計量學導論」[Wanglu Hsinhsi Chilianghsueh Taolun]，國立成功大學圖書館館刊 16 期(2007 年 6 月) [*National Cheng Kung University Library Journal* 16 (June 2007)]：19。

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