

Trends in Malaysian LIS Research 1996-2006: A Content Analysis of the MJLIS Articles

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Abstract

This paper is a content analysis of library and information science (LIS) research by Malaysian authors, which were published in the Malaysian Journal of Library & Information Science (MJLIS) from 1996 to 2006. The aim is to find out how Malaysian LIS research is distributed over topics, which research methods are favoured, and the pattern of authorship. An author is regarded as Malaysian by virtue of affiliation to a Malaysian institution as stated in the published article. The ratio of male to female authors changed from 5:2 to 1:2 over the eleven years. Research focused consistently on 3 main classes; information storage & retrieval (IS&R), information seeking, and scientific and professional communication. They totaled up to at least 50% and as high as 100% of the research articles every year. There was strong emphasis on empirical research strategies, which were utilized for at least 50% of the research carried out per year. The survey and bibliometric method were the most engaged methods.

Keywords: Library and information science research; Malaysian LIS research; Research trends; Content analysis; Malaysian Journal of Library & Information Science; MJLIS.

1. Introduction

As a field of study develops and changes occur in society, so does the research in the field. This applies also to the field of study in library and information science (LIS) in Malaysia. LIS research in Malaysia is published in various places. One avenue for publication is the *Malaysian Journal of Library & Information Science (MJLIS)*, which has evolved as a national major publication worthy of mention in the 65th IFLA conference as indicated by Yee (1999). As such it is assumed that it would be meaningful to make a study of the trend of Malaysian LIS research published by the *MJLIS* as it has published contributions from both the local and international communities as a scholarly, refereed, indexed and abstracted journal.

For this purpose the corpus of research articles by Malaysian authors in the *MJLIS* from 1996-2006 is examined. Malaysian authors are those who are affiliated to Malaysian institutions as stated in the research articles. The research questions to be answered are: (a) what is the authorship pattern of Malaysian articles published from 1996 to 2006; (b) how are the research articles distributed over topics; (c) what is the pattern for research strategies over the eleven year period; and (d) what is the orientation of Malaysian LIS research.

In the interests of continuity and comparability, this study is modeled on that of two Finnish research scholars, Jarvelin and Vakkari (1993). Their two classification schemes for topics and research methods is used as no one has presented a more valid version of it despite criticism (Rochester and Vakkari, 2003). By identifying the foci, emphases and neglected areas in research and the strategies employed, suggestions can be made: (a) to determine new areas of research; (b) to look at old areas with new insights and possibilities; and (c) identify subjects in need of further research and also underutilized research methods.

2. Problem Statement

Scholarly LIS journals embody the development, the state-of-the-art and the theoretical foundations of the field, as well as indicates librarians' and information professional's thinking, practice and priorities. It is needful then to identify trends of research mirrored by the *MJLIS* as it accordingly embodies Malaysian LIS published works and presents it to the global audience.

3. Objective of Study

The purpose of this study is to identify and discuss the trends and developments in the library profession, the discipline of LIS and the research in this field particularly in Malaysia through content analysis of the *MJLIS* for the period from 1996-2006. The year 1996 is significant as it was the commencing year when *MJLIS* began to publish scholarly LIS research in and around Malaysia following the establishment of the Masters of Library and Information Science (MLIS) programme at the Faculty of Computer Science and Information Technology, University of Malaya in 1995.

It would therefore be relevant to determine the topics of concern to members of the Malaysian LIS profession by examining the academic literature generated during this eleven year period as both the journal and library science programme developed concurrently. Through the investigation of trends in topics of research and the research methods used there should be:

- a) a revelation of subject dispersion patterns in terms of topics declining and gaining in "popularity" and changing emphasis in subject coverage since 1996;
- b) establishment of possible reasons, if any, of why some topics are favored;
- c) identification of gaps and areas of saturation; and
- d) mapping out of possible future research areas and directions for Malaysian LIS

4. Literature Review

According to Kajberg (1996), LIS literature is rich in statistical analysis of published LIS research, and content analysis have been used to reveal characteristics of a predefined body of literature in this field. This body of literature mirrors the development, the state-of-the-art and the theoretical foundations of LIS as well as indicates librarians' and information workers' professional thinking, practice and priorities.

Kajberg further added that in defining 'content analysis' in the context of LIS, it has been distinguished between "classification analysis", a method which assigns documents (or other means of communication) to classes or categories to quantify one or more of their characteristics, and "elemental analysis", which is based on the recording of word or word group frequencies from these documents. Also, the disciplined employment of appropriate content classification schemes with "clearly and accurately defined categories of analysis, objective, exact and rigorous measurement of data it can be concluded that content analysis can be applied fruitfully to address a multiplicity of issues in LIS research.

Over the years, research in the field of LIS has been examined in many different ways right up to 1990 when Finnish researchers Kalervo Jarvelin and Pertti Vakkari developed techniques for studying published research output in LIS, in such a way that the research output can be compared over time and across boundaries according to Clyde and Ogberg (2004).

Jarvelin and Vakkari (1993) stressed that only research results and meta-theoretical statements need be analyzed to the exclusion of professional writings so as to safeguard the knowledge base from "pseudoscience". Their content analysis model consists of 3 parts: a) the distribution of the articles over topics, b) the approaches: viewpoints on information dissemination and social levels and c) the methods: research strategies and data collection methods, remain robust and usable with adaptations and supplements to cater for the real conditions of the country in which the research is conducted (Cheng 1996). A study of published Malaysian LIS research and its trend will not only add another piece to the yet to be completed picture of worldwide LIS research but may also yield new insights to the field as profession and as research.

5. Scope of Study

All the articles by Malaysian authors are selected for analysis from the eleven volumes of the *MJLIS* from 1996 to 2006. A Malaysian author is defined as one who is affiliated to a Malaysian institution and that information is stated in the research article itself. An eleven-year period will permit identification of emerging trends in the research articles in terms of its topics and research strategies. The Jarvelin & Vakkari classification schemes for topics and research strategies (1993) is applied. The data obtained is tabulated and summarized separately by topic and research method. The findings are discussed and compared to data from other international studies.

6. Methodology

(a) Content Analysis

To identify the trend of Malaysian LIS research, a singular journal study of the *MJLIS* was conducted, as in the Turkish LIS research study by Yontar and Yalvac who examined one core journal in their country to reflect its national research (Rochester and Vakkari, 2003). It is assumed here that the research articles in the *MJLIS* has fulfilled the definition of research as set by Jarvelin and Vakkari (1993), that is, "Research is an inquiry, where the goal is to elicit, through a systematic method, some new facts, concepts or ideas."

The content analysis model by Jarvelin and Vakkari (1993) is utilized with caution as it reflects the cognitive tradition of LIS in the Western industrialized world while Malaysia as yet is still a developing country. Problems of interpretations of some classes both in the topic and research methods schemes were anticipated and treated accordingly as cultural differences might affect the understanding of the content of similar expressions. However in this case as with the research done by Cheng (1996) only two parts of the model were used, that were, (a) the distribution of articles over topics, and (b) the research strategy.

(b) The Classification Schemes

A classification scheme of a field gives one an understanding about the scope of the field and its major subfields. It demarcates the discipline from other fields and distinguishes the themes and problems that belong to the field. The classification schemes for topics and research methods of LIS by Jarvelin and Vakkari (1993) are employed (Appendix A and Appendix B). Though it had been justifiably argued by some that these schemes might not accurately portray the present landscape of the LIS field and its subfields, no one has so far devised any viable system nor build a more valid version of it (Rochester and Vakkari 2003) to be employed in the new century. Since its contemporariness has been proven by Davenport (1998) right up to the end of the 90s the employment of these schemes would not contradict the recommendation by Rochester and Vakkari to not use the schemes

devised in the early 90s and before. The articles under analysis for this study are classified as definitive as possible into the appropriate subclass and when an article is found to be of multiple topics the main topic is the one considered.

(c) Data Collection

All the articles from the eleven volumes of the *MJLIS* published from 1996 to 2006 are scanned through via the online version of the *MJLIS*. Articles by Malaysian authors are identified by virtue of internal evidence, that is the authors' affiliation to Malaysian institutions as stated in the article itself. Data on authorship characteristics such as gender, single or multi author are also collected. Where the gender of the author is not clear internal evidence is again sought from the articles itself where the author/s is or are explicitly referred to as Mister or otherwise.

To determine the topic of a particular article, the title, keywords, subject category where specified and the abstract of the article are first examined. If further evidence is required the whole article is read through to determine both topic and research method. When an article is found to be of multiple topics the main topic is the one considered. The classification schemes are then applied accordingly to gain an overview of the distribution of topics and research methods for the eleven years.

The researchers have borne in mind the biases that could occur with only one person assigning categories to the articles studied and have used the subject categories and keywords assigned by the *MJLIS* to the articles to guide in the assignation.

7. Findings

(a) Authorship Pattern, 1996-2006

As indicated in Table 1, articles by Malaysian authors have dropped from 63% to 43% of the total number of articles over the eleven years. It started off in 1996 with the ratio of Malaysian male authors to female authors at five to two. There was a steady decline of the number of participating Malaysian male authors from 1996 to 2006 until the ratio of Malaysian male authors to female authors became one to two instead.

Table 1. Number of Articles by Malaysia Authors in the *MJLIS* from 1996-2006

Year	Volume	Total No. of Articles	No. of Articles by Malaysian Authors				
			N (%)	No. of single author Articles	No. of multi-author Articles	No. of Male Authors	No. of Female Authors
1996	1	16	10(63)	5	5	10	4
1997	2	16	10(63)	6	4	6	6
1998	3	13	6(46)	3	3	10	5
1999	4	15	10(67)	9	1	5	4
2000	5	14	7(50)	3	4	4	3
2001	6	14	7(50)	5	2	4	5
2002	7	13	4(31)	0	4	4	4
2003	8	15	6(40)	2	4	2	7
2004	9	14	7(50)	2	5	5	7
2005	10	14	6(43)	2	4	3	7
2006	11	14	6(43)	2	4	3	6

In the beginning years of the *MJLIS* more than 50% of the Malaysian authored articles were single author but after 2002 there was a decline in the number of single author papers. By 2006 multi-author articles were predominant at 66% of the number of Malaysian authored articles for the year.

(b) The Distribution of Articles over Topics

To determine the topic of a research article, its title, keywords and subject category were analyzed. Where closer examination is required to determine the topic, the whole article was scanned.

From Table 2, it can be observed that over the eleven years, Malaysian authors have consistently concentrated on three main classes of topics. They are information storage & retrieval (IS&R), information seeking, and scientific and professional communication. Throughout the years these three main topics have the highest combined percentages although at the turn of the century the stress was mostly on information seeking. The percentages in Table 2 indicate that Malaysian authors have placed increasing emphasis on information seeking (10.0% - 50.0%). For Jarvelin and Vakkari (1993) this increasing trend should be present as information seeking from a logical point of view is a central area to LIS. Within this topic the subclass "The use/users of Information channels or sources" was given the greatest emphasis (Table 3).

Table 2. Topic Distribution Among Main Classes in Articles by Malaysian Authors (%)

LIS Topic	1996 N=10	1997 N=10	1998 N=6	1999 N=10	2000 N=7	2001 N=7	2002 N=4	2003 N=6	2004 N=7	2005 N=6	2006 N=6
Professions											
Library History											
Publishing & book history											
Education in LIS		20.0		10.0			25.0	33.3	14.3		
Methodology			16.7								16.7
Analysis of LIS	10.0										
L&I Service Activities	40.0	10.0				14.3	25.0		14.3	16.7	
IS&R	20.0	20.0	33.3	10.0	14.3	14.3		16.7	14.3		16.7
Information seeking	10.0		16.7	20.0	57.1	42.8	25.0	16.7	28.6	50.0	50.0
Scientific & professional communication	20.0	50.0	33.3	50.0	28.6	28.6	25.0	33.3	14.3	33.3	16.7
Other LIS topic				10.0					14.3		
Other study (other discipline)											
Totals	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.1	100.0	100.1

Two other topics that were given comparatively considerable coverage are education in LIS and library & interlibrary (L&I) service activities. These topics were researched on intermittently over the eleven years. It can be observed that L&I service activities that began in 1996 as the most focused-on topic steadily lost its popularity over the years (40% - 16.7%).

Methodology and analysis of LIS were given little attention. This neglect was also observed in the Jarvelin and Vakkari (1993) study. The two researchers reasoned that these two topics were no longer considered essential after the mid-60s as developments in LIS technology and research have stabilized. As a result focus may have shifted to educational and applications issues. Topics that were totally ignored were the professions, library history and publishing and book history.

Within the topic of scientific and professional communication it can also be seen that the study of scientific or professional publishing (10.0% - 33.0%) and the study of citation patterns and structures (10.0% - 28.6%) were given considerable focus by Malaysian authors (Table 3). Within IS&R it is obvious that the topic of cataloguing (10% in 1997 only) has been neglected while there has been more interest in the studies of databases (Table 3). For information seeking, the subtopic on use/users of information channels/sources was the most focused on with almost equal stress on information management.

Table 3. Topic Distribution by Sub-classes for Articles by Malaysian Authors (1996-2006)

Topic Sub-Classes	1996 N=10	1997 N=10	1998 N=6	1999 N=10	2000 N=7	2001 N=7	2002 N=4	2003 N=6	2004 N=7	2005 N=6	2006 N=6
Education in LIS		2 (30.0)		1 (10.0)			1 (25.0)	2 (33.3)	1 (16.7)		
Methodology			1 (16.7)								1 (16.7)
Analysis of LIS	1 (10.0)										
Collections						1 (14.3)	1 (25.0)		1 (16.7)		
Inf. or Ref. Service	1 (10.0)										
User education	1 (10.0)										
Automation	2 (20.0)	1 (10.0)								1 (16.7)	
Cataloguing		1 (10.0)									
Info Retrieval	1 (10.0)								1 (16.7)		1 (16.7)
Bibliographic Databases			1 (16.7)	1 (10.0)							
Nonbibliographic Databases	1 (10.0)	1 (10.0)	1 (16.7)		1 (14.3)	1 (14.3)		1 (16.7)			
Information Dissemination					2 (28.6)						
Use/users of information channels/sources			1 (16.7)	1 (10.0)	1 (14.3)	1 (14.3)			2 (33.3)	1 (16.7)	2 (33.3)
Information seeking behaviour				1 (10.0)		2 (28.6)					
Information use										1 (16.7)	
Information management	1 (10.0)				1 (14.3)		1 (25.0)	1 (16.7)		1 (16.7)	1 (16.7)
Scientific & professional publishing	1 (10.0)	2 (20.0)	1 (16.7)	3 (30.0)		1 (14.3)		2 (33.3)		2 (33.3)	
Citation patterns & structures	1 (10.0)	1 (10.0)	1 (16.7)	1 (10.0)	2 (28.6)	1 (14.3)					
Other aspects of Communication		2 (20.0)		1 (10.0)			1 (25.0)		1 (16.7)		1 (16.7)
Other LIS Topic				1 (10.0)					1 (16.7)		

(c) Research Strategies

Malaysian authors have a strong preference for empirical research strategies as reflected in the statistics in Table 4. From 1997 onwards, empirical research strategies accounted for at least 50.0% of the research articles. There was also a good share of articles utilizing literature review and discussion methods with facts and statistics from others' research to support their proposals for developments in LIS in the local context.

Table 4. Research Strategies in the Articles by Malaysian Authors in the *MJLIS* (%)

Research strategy	1996 N=10	1997 N=10	1998 N=6	1999 N=10	2000 N=7	2001 N=7	2002 N=4	2003 N=6	2004 N=7	2005 N=6	2006 N=6
Empirical research strategy	40.0	50.0	100.0	80.0	71.4	71.4	75.0	50.0	85.7	83.3	100.0
Historical method											
Survey method	10.0		16.7	30.0		28.6	25.0	16.7	42.8	33.3	50.0
Qualitative method											
Evaluation method	10.0				14.3						
Case or action research method										16.7	16.7
Content or protocol analysis		30.0	33.3		14.3						
Citation analysis		10.0			28.6						
Other bibliometric method	10.0	10.0	33.3	30.0		28.6	50.0	16.7	14.3	16.7	16.7
Secondary analysis					14.3			16.7	14.3		
Experiment											
Other empirical method	10.0	10.0	16.7	20.0		14.3			14.3	16.7	16.7
Conceptual research strategy											
Verbal argumentation, criticism									14.3		
Concept analysis											
Mathematical or logical method											
System/software analysis/design	20.0	20.0									
Literature review		10.0		10.0	14.3	14.3					
Discussion paper	40.0	20.0		10.0	14.3	14.3	25.0	50.0		16.7	
Bibliographic method											
Other method											
Not applicable, no method											
Totals	100.0	100.0	100.0	100.0	100.1	100.1	100.0	100.1	100.0	100.1	100.1

The two most engaged empirical methods were the survey method (10.0% - 50.0%) and bibliometric method (10.0% - 50.0%). These two methods have also been consistently employed throughout the eleven-year period compared to other empirical methods, which were used sporadically. Demanding research strategies such as the qualitative method and experimental method were not utilized at all.

8. Discussion

(a) There is a Switch of Trend from Single-author to Multi-author Articles.

This could be due to the cultural characteristic of the country which have always rallied for communal themes whether in work or at leisure. Working in isolation might not exactly reflect the community spirit. Therefore the emphasis is more on group rather than individual research projects. According to Rochester and Vakkari (2003) most Australian researchers worked alone because of lack of grants for large scale research that requires collaboration. Likewise the authorship pattern in Spain also shows a predominance of single authorship as reported by Rochester and Vakkari (2003). The single authorship predominance may also be discipline dependent as perhaps LIS authors exhibit similar publishing behaviour as those in the humanities and social science disciplines where single authorship is predominant.

(b) There is a Decrease in the Number of Malaysian Male Authors.

This could be related to the number of male and female LIS students and faculty in Malaysian institutions or number of male-female ratio in the profession. Further analysis would be required to correlate the two.

(c) The Most Popular Topics of Research in Malaysian LIS Research.

In their comparison of national trends, Rochester & Vakkari (2003) assumed that fields or topics investigated can be regarded as library oriented and non-library oriented research. As IS&R can be applied to organizations other than libraries it cannot be considered pure library oriented research. Information seeking and scientific and professional communication likewise cannot be regarded as pure library oriented research but rather as non-library oriented research. Therefore based on the above reasoning that was employed in the Rochester and Vakkari IFLA report on LIS national trends in 2003, it can be seen that Malaysian LIS research is more focused on broader topics than purely library oriented research. This could be due to local attempts to convert the traditional outlook of libraries to that of multi purpose information/resource centers to broaden the concept of libraries in both professional and public outlook.

(d) The Highly Utilized Research Strategies.

In the comparison of national LIS trends by Rochester and Vakkari (2003) the survey method was found to be popular internationally and nationally. This trend was also found to exist in Malaysian LIS research. The reason proposed was this method was relatively cheap and easy to employ and as such can indicate that researchers are working under financial and manpower constraints. The other reason for the survey method's popularity is that it can be employed by researchers working alone. Bibliometric methods are also not costly in terms of finances but rather tedious and time consuming as in the case of citation analysis studies.

9. Conclusions

As with other national trends, Malaysian LIS research has its own research profile that reflects the cultural characteristics of the country, social structure of the discipline and the stage of development it is in. It is apparent that Malaysian authors do not work on the premise that a library is merely a traditional information container. There is clear embrace of an information-centered focus research, which seeks to develop better tools and better solutions to enlarge the domain of LIS. Unless the knowledge base of LIS in Malaysia keeps on being broadened and strengthened research can still become one sided and narrow after a point of time. But if no new valid classification schemes have been devised there is then no exactly new topics that have come into being save for some new subclasses that arose out of modifications to cater for particular national conditions under study. As Ranganathan has wisely discussed on the many facets of the same book it can perhaps be of benefit to look again for new facets in traditional entities. Perhaps then a library can transcend even the bigger boundaries of a resource center and present itself as a walk-in database in this new century and open a whole new world of possibilities for LIS researchers of the 21st century.

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Appendix A

The Classification Scheme for LIS Topic by K. Jarvelin and P. Vakkari. 1993.

Major classes		Subclasses
100	Professions	
200	Library history	
300	Publishing and book history	
400	Education in LIS	
500	Methodology	
600	Analysis of LIS	
700	Research on L&I service activities	701 Circulation or interlibrary loans 702 Collections 703 Inf. Or ref. service 704 User education 705 Buildings or facilities 706 Administration of planning 707 Automation 708 Other L&I service activities 709 Several interconnected L&I activities
800	Research in IS&R	801 Cataloguing 802 Classification and indexing (process or languages) 803 Information retrieval 804 Bibliographic databases or bibliographies 805 Nonbibliographic databases (textual, numeric....)
900	Research on information seeking	901 Information dissemination 902 The use/users of information channels/sources 903 The use of L&I services (no other channels considered) 904 Information seeking behaviour (focus on persons) 905 Information use (whether (and how) used) 906 Information management
1000	Research on scientific and professional communication	1001 Scientific or professional publishing 1002 Citation patterns and structures 1003 Other aspects of communication
1100	Other LIS Topic	
1200	Other study (other discipline)	

Appendix B

The Classification Scheme of LIS Research Strategies by Jarvelin and Vakkari (1993).

Major Classes		Subclasses
10	Empirical research strategy	11 Historical method 12 Survey method 13 Qualitative method 14 Evaluation method 15 Case or action research method 16 Content or protocol analysis 17 Citation analysis 18 Other bibliometric method 21 Secondary analysis 22 Experiment 29 Other empirical method
30	Conceptual research strategy	31 Verbal argumentation, criticism 32 Concept analysis
40	Mathematical or logical method	
50	System/software analysis/design	
60	Literature review	
70	Discussion paper	
80	Bibliographic method	
90	Other method	
00	Not applicable, no method	