

## A Comparative Study on Mis Research at Mainland China and Abroad (2002~2007)

**Peiji Shao\***

School of Management and Economics, University of Electronic Science and Technology of China,  
Chengdu 610054, China

**Yiwen Wang**

School of Management and Economics, University of Electronic Science and Technology of China,  
Chengdu 610054, China

**Zongcong Tao**

School of Management and Economics, University of Electronic Science and Technology of China,  
Chengdu 610054, China

(Received: March 15, 2008 / Revised: December 10, 2009 / Accepted: December 20, 2009)

### ABSTRACT

Based on the literatures about MIS published in Mainland China and foreign journals from 2002 to 2007, this paper compares and analyzes the various research topics, research methods and the distribution of publication in MIS research. It brings forward three aspects of differences between the domestic and foreign MIS research and gives some suggestions to advance domestic research.

Keywords: Management Information Systems, Research, Journal

### 1. Introduction

In the last two decades, Many foreign researchers have conducted studies on Management Information Systems (MIS), such as Alavi and Carlson [1], Claver *et al.* [2], Gonzalez and Llopis [2], Vessey *et al.* [3], Martin and Mengis [4], Zhang and Li [5]. These analyses are helpful to define the study trend.

---

\* Corresponding author, E- mail: shaopj@uestc.edu.cn

In Mainland China, there are few papers focusing on the studies on MIS. One famous paper is "Review of information management and information system research in mainland China" (Yu, Huang [6]). This paper discussed research status of information management and information systems from 1999 to 2002 in China and compared it with the result of "An analysis of research in Information Systems (1981~1997)" [2], and gave some valuable suggestions [6]. On the other hand, Daqing Zheng et al compared the disparities of research topics, research methods, level of analysis and reference discipline of MIS at domestic China and abroad based on the samples selected from the renowned international conferences and major journals of IS in China [7]. Meiyun Zuo et al studied the research devotions, fields, methods etc of scholars in MIS domain through a survey of 107 researchers of MIS in Chinese universities, summarized the trends of Chinese MIS discipline [8].

The significance of this paper is to make a comparative analysis of the current status of the studies on MIS at domestic China and abroad, compare the researching focus of each, find out the shortcomings and put forward some useful proposals for the domestic MIS scholars, and also provide foreign MIS scholars with a better understanding of the work done by Chinese scholars.

By the means of literatures statistical analysis, we collect MIS literatures published in domestic and foreign core journals from 2002 to 2007, and then review the title, keywords, abstract of each article to do the statistical classification. For some articles that can't be classified by the abstracts, we analyzed the entire articles. Then we mainly compared the similarities and differences on research topic, research methodology and distribution of publication at domestic China and abroad. By the comparative analysis of the current status of the studies on MIS, we identify the challenges in domestic research, and provide some suggestions to improve our maturity level in the MIS field.

## **2. Data Collection**

### **2.1 Domestic Data Collection**

As MIS is still a relatively new discipline in China, there are almost no journals specializing in MIS currently in China. However, related publications are abundant,

and each publication has its own preferences. It is hard to make a comprehensive statistical analysis, and the selection of publications is essential.

Considering the fact that the MIS discipline mainly originated from the Management Science and Computer Science [6], we selected the journals using the following approach. We researched the MIS-related professional journals designated by key domestic universities combining with the core journals about the management science and computer science appointed by Natural Science Foundation of China. We also balanced the number of articles focusing on either management science or computer science. We finally narrowed down to seven journals which concentrate more on MIS-related papers and are representation of the purpose of this study. Among them, four journals, No.1 to No.4 are tending to Management Science, and three journals, No.5 to No.7 are tending to Computer science.

We collect 697 articles in total, among which 307 articles are tend to Management Science and 390 articles are tend to Computer science. The total number of articles is listed in Table 1. The articles focusing on management are fewer than that focusing on computer science.

Table 1. The Amount of Articles in Domestic Journals

No	Journals	2002	2003	2004	2005	2006	2007	Total
1	Journal of management sciences in China	14	16	6	9	8	8	61
2	Journal of Industrial Engineering and Engineering Management	29	15	10	12	7	5	78
3	Systems Engineering-theory and Practice	23	19	17	12	17	17	105
4	Chinese Journal of Management Science	20	6	10	12	6	9	63
5	Computer Integrated Manufacturing Systems	22	17	23	29	15	28	134
6	Journal of Computer Applications	14	11	10	13	12	14	74
7	Journal of Computer Applications	22	27	22	36	35	40	182
	Total	144	111	98	123	100	121	697

## 2.2 Foreign Data Collection

The most respected and prestigious journals specializing in the study of IS abroad include the following: Communications of the ACM, DataBase, Datamation, Decision Support Systems, Information and Management, Interfaces, Journal of Management Information Systems, Journal of Computer Information Systems, Journal of

Systems Management and MIS Quarterly. There are also some journals which, though not specializing in IS, regularly publish articles related to the areas of: Academy of Management journal, Academy of Management Review, Administrative Science Quarterly, Decision Sciences, Harvard Business Review, Management Science, Omega, and Sloan Management Review [2].

According to the ranking on MIS-specialized journals provided by AIS [9] and Rainer and Miller [10], we have decided to focus on three journals: MIS Quarterly (MISQ), Information Systems Research (ISR), and Journal of Management Information Systems (JMIS). We use EBSCO to search the articles between 2002 and 2007, and collected 444 articles in total in Table 2.

Table 2. The Amount of Articles in Foreign Journals

Journals	2002	2003	2004	2005	2006	2007	Total
MISQ	16	22	24	25	21	30	138
ISR	25	18	20	13	12	21	109
JMIS	36	34	35	37	30	25	197
Total	77	74	79	75	63	76	444

### 3. Data Analysis

The analysis of the articles was divided into three sections: the topics most oftenly considered, the research methodology and the distribution of publication at domestic China and abroad.

#### 3.1 Research Topics

To deal with the classification of topics, we followed the sets used by Claver *et al.* [2] and Richard *et al.* [11]. Over all, we identified 34 different topics classified into five major groupings. These topics are presented in Table 3.

The article's abstract, title, and keywords were the basic way to categorize an article as belonging to a particular topic. If impossible to classify an article, we included it in the Others group.

Table 3. MIS Research Topics

MIS Management	MIS Development	MIS Technologies	MIS Usages	Others
Strategic planning for MIS	MIS Development	Database/ Data WareHouse	DSS/ GDSS	MIS research
MIS alignment/ organizational impact	MIS requirement Analysis	Artificial intelligence	ES	Others
MIS human resources	MIS architecture	The internet	Telecommuting	
MIS evaluation	MIS implementation	Other IT	Inter- organizational systems	
Using MIS for competitive advantage	Workflow		MIS and small business	
MIS project management			EC	
MIS outsourcing			ERP	
MIS security and ethics			SCM	
IT management			CRM	
Information product pricing			KM	
Other management issues			BPR	
			Other MIS usages	

This paper categorized the domestic and foreign MIS research articles according to the topics above mentioned, and presented the three most frequent topics in each group in Table 4.

- MIS usages (Domestic research, 53.37%)

In the past, studies were primarily focusing on OA, CAD, AIS, and so on. Now, more and more emphasis has been put on SCM, EC, DSS and ERP, the systems integrating all information resource. Studies on EC and SCM are gaining more attention due to the fact that these areas directly impact an enterprise's competitive advantage.

- MIS development (Domestic research, 28.12%)

Most articles describe how to design and implement an MIS in certain fields, and some articles establish some models, architecture and so on. In addition, there have

been more and more studies on the applications of workflow to enterprise reorganization, SCM, Agile Manufacturing and so on.

Table 4. Domestic and Foreign MIS Research Three Popular Groups

Domestic research			Foreign research		
Topics	No.	Percentage	Topics	No.	Percentage
<b>MIS Usages</b>	<b>372</b>	<b>53.37%</b>	<b>MIS Management</b>	<b>209</b>	<b>47.07%</b>
SCM	98	14.06%	IT Management	62	13.96%
EC	70	10.04%	MIS evaluation	49	11.04%
DSS/ GDSS	49	7.03%	MIS security and ethics	29	6.53%
<b>MIS Development</b>	<b>196</b>	<b>28.12%</b>	<b>MIS Usages</b>	<b>136</b>	<b>30.63%</b>
MIS Development	107	15.35%	EC	50	11.26%
Workflow	48	6.89%	KM	30	6.76%
MIS architecture	35	5.02%	DSS/GDSS	11	2.48%
<b>MIS Management</b>	<b>62</b>	<b>8.90%</b>	<b>MIS Development</b>	<b>38</b>	<b>8.56%</b>
MIS evaluation	17	2.44%	MIS Development	21	4.73%
MIS PM	13	1.87%	MIS requirement analysis	11	2.48%
MIS outsourcing	8	1.15%	MIS implementation	5	1.13%

- MIS management (Domestic research, 8.90%)

Studies are concentrated on system evaluation, project management and outsourcing. IT outsourcing has a lot of risks and challenges. Therefore, with China becoming the key region of IT outsourcing, domestic researchers pay greater attention to the study on such pattern.

The table 4 shows, the most popular topics in foreign researches:

- MIS management (Foreign research, 47.07%)

These papers are mainly about investment, innovation, and application of IT. The studies on MIS evaluation mainly include customers' satisfaction, applying extent, implementation effect. With the rapid development of EC, security and ethics have become key issues as well.

- MIS usages (Foreign research, 30.63%)

The significance of articles dedicated to EC, and also to KM and DSS.

- MIS development (Foreign research, 8.56%)

System development, requirement analysis and system implementation have been the topics of a considerable number of articles. Foreign authors not only value the development technology, but also take consideration of managing pattern and business requirement.

### 3.1 Research Strategies

The papers can be classified as empirical and theoretical ones. Following Alavi and Carlson [1], we divided theoretical studies into conceptual, illustrative and applied concepts. According to the classical scheme elaborated by Van Horn [12], the empirical ones are classified as case studies, field studies, field experiments and laboratory experiments, as in Table 5.

Table 5. The Amount of Articles of Domestic and Foreign MIS Research Methodology

Research methodology	Domestic research								Foreign research							
	02	03	04	05	06	07	Total	Percentage	02	03	04	05	06	07	Total	Percentage
<b>Theoretical studies</b>	131	97	78	90	79	73	548	79%	18	23	23	28	16	26	134	30%
Conceptual	70	59	43	58	44	37	311	45%	9	5	7	11	6	12	50	11%
Illustrative	36	21	16	19	20	28	140	20%	9	17	10	15	9	11	71	16%
Applied conceptual	25	17	19	13	15	8	97	14%	0	1	6	2	1	3	13	3%
<b>Empirical studies</b>	13	14	20	33	21	48	149	21%	59	51	56	47	47	50	310	70%
Case studies	9	7	17	14	15	23	85	12%	7	8	7	9	11	15	57	13%
Field studies	2	6	2	9	0	6	25	3%	39	35	35	23	18	22	172	39%
Field experiments	0	0	0	0	0	0	0	0%	4	4	4	8	7	5	32	7%
Laboratory experiments	2	1	1	10	6	19	39	6%	9	4	10	7	11	8	49	11%
<b>Total</b>	<b>144</b>	<b>111</b>	<b>98</b>	<b>123</b>	<b>100</b>	<b>121</b>	<b>697</b>	<b>100</b>	<b>77</b>	<b>74</b>	<b>79</b>	<b>75</b>	<b>63</b>	<b>76</b>	<b>444</b>	<b>100</b>

In China, majority of authors are focusing on theoretical studies (79%). They are based mainly on ideas, structures, and speculations. Some authors define framework,

models, or theories and give justifications or explanations; some authors provide guidance on practice and offer recommendations for action or roadmap.

Foreign studies are more empirical (70%) vs. 30% theoretical studies in table 5. Among the best-known theoretical studies are the illustrative, conceptual and applied concepts. In empirical studies, these articles also put forward hypothesis or proposition, or examine and correct the theories they proposed. In such studies, the most popular are the field studies (39%). According to Lai and Mahapatra [13], case studies are useful during the exploration stage of research, whereas the field studies require a deeper understanding of the phenomenon to be studied. Field study is, therefore, more suitable for more advanced research. Likewise, in Teng and Galletta's paper [14], very few number of experiments were found compared to field or case studies.

### 3.2 Distribution of Publication

In order to compare the distribution of publication by universities in China and other countries, we grouped these 697 domestic articles by the universities that the first authors are associated with, and classified each article into management science or computer science. The top 10 universities by the number of MIS articles are shown in Table 6.

We can see from Table 6 that, Tsinghua University has the most prominent research, and it publishes more computer application related articles than management science related articles. Xi'an Jiaotong University and Huazhong University of Science and Technology, ranked No.2 and No.3 also have abundant publications. The former has more management science related articles while the latter has more computer application related articles. The numbers of articles from the universities ranked from No. 4 to No.10 are relatively close, but only the Southeast University and Fudan University have more management science related articles than computer application related articles. This analysis indicates that key research institutions of China have more fruitful research on MIS technology than MIS management.

In addition, nearly 200 domestic universities have already established information system related specialty [15], but nearly 50% of the total 697 articles came from the top 10 universities, which indicated that our high-level MIS research is concentrated in small number of insitutions.



Table 6. The Top10 Domestic Universities for Their MIS Articles' Amount

Rank	University	Article amount	Management science bias articles' percentage	Computer application bias articles' percentage
1	Tsinghua University	64	40%	60%
2	Xi'an Jiaotong University	49	62%	38%
3	Huazhong University of Science and Technology	42	40%	60%
4	Harbin Institute of Technology	35	48%	52%
5	Chinese Academy of Sciences	32	24%	76%
6	Southeast University	28	83%	17%
7	Shanghai Jiao Tong University	26	35%	65%
8	Fudan University	24	52%	48%
9	Beijing University of Aeronautics and Astronautics	23	33%	67%
10	Zhejiang University	23	43%	57%

Table 7. Authors with the most Articles Published in Foreign Journals

Authors	University	Articles
Izak Benbasat	Sauder School of Business, University of British Columbia, Canada	8
Kauffman. Robert J	Information Decision Sciences Department, Carlson School of Management, University of Minnesota	7
Andrew B. Whinston	Department of MSIS McCombs School of Business University of Texas at Austin	6
V. Sambamurthy	Information Technology Management, Eli Broad College of Business, Michigan State University	5
Detmar W. Straub	Department of Computer Information Systems, J. Mack Robinson College of Business, Georgia State University	5
Jay F. Nunamaker Jr	Computer Science and Communication, University of Arizona, Tucson	5
Sarv Devaraj	Management, University of Notre Dame	5
David Gefen	MIS, Drexel University, Philadelphia	4
Rajiv Kohli	Management, University of Notre Dame	4
Tridas Mukhopadhyay	Carnegie Mellon University	4

On the contrast, we find that the distribution of publication among universities is more balanced in foreign countries when we conduct similar statistical analysis of those foreign articles. So we analyze the number of articles published by one or multiple authors, as in Table 7. It shows the authors with the most articles published in foreign journals (tab2).

It can be seen that, Izak Benbasat who comes from University of British Columbia has published most articles. In addition, only two authors come from the same school. Compared with China, the publication distribution among foreign universities is not as concentrated.

#### **4. Summary and Conclusion**

The comparative analysis of all the above mentioned journals during 2002 to 2007 shows the gap between Mainland China and foreign research from the three aspects.

- Research topics: domestic researchers tend to focus on traditional areas such as systems development and usages, while foreign researchers lay more emphasis on MIS management.
- Research strategies: domestic research focuses on conceptual theoretical studies. Foreign research pays more attention to empirical research over theoretical research, and the most popular empirical studies are field studies, followed by case studies and laboratory experiments.
- Distribution of publication: China's high-level MIS research field has a phenomenon of being highly concentrated in small number of research institutions. Top ranking research institutions have more research achievements in MIS technology than MIS management. But the publication distribution among foreign universities is relatively even.

In order to shorten the gap between Mainland China and foreign research, we give the following suggestions to tackle the areas identified in our study.

- The success of MIS mainly depends on management, rather than technology. It is necessary to strengthen the study on MIS management. Our authors should combine the feature of Chinese firms, study principles and methods of conducting MIS

research effectively. With the rapid development of Internet, the problems of security and ethics have become more prominent and we should start focusing on these topics.

- Domestic researchers should apply the scientific methodology and put forward the information engineering in firms.
- Domestic researchers also should reinforce communication and cooperation with foreign researchers, learn the advanced experiences, and study the condition of China and the actual environment of firms, construct MIS which fits with our status.

MIS research in China has made a lot of achievements during past decades; however, we are also facing with many challenges. We should explore and study with more breadth and depth.

In addition, this study has some limitations during the research, mainly in the following two areas:

- The limitation of journal selection

As mentioned earlier, the seven domestic journals were selected considering several factors due to the lack of journals specializing in MIS before 2007. We selected three foreign journals according to the ranking on MIS-specialized journals

Although the journals we selected have a certain degree of representativeness, there are some limitations on the literatures' coverage, pertinence and the proportion of articles related to management science and computer science. Therefore this paper is able to reflect the MIS research status to some extent. We could study more journals to make the result more comprehensive and robust in the future.

- The limitation of Research Method

By the means of literatures statistical analysis, this paper collects 697 domestic articles and 444 foreign articles published in core journals from 2002 to 2007. For its large sample size and high-quality articles selected, this study reflects the differences of MIS research in China and foreign countries in general.

However, data classification in this paper was the result of descriptive statistics of literature. This approach makes it challenging to do farther data analysis, such as T-test. In future studies, we will focus more on in-depth analysis using empirical research methodologies.

## References

- [1] Alavi, M. and P. Carlson, "A review of MIS research and disciplinary development," *Journal of Management Information Systems* 8, 4 (1992), 45-62.
- [2] Claver, E., R. Gonzalez, and J. Llopis, "An analysis of research in information systems (1981~1997)," *Information and Management* 37, 4 (2000), 181-195.
- [3] Vessey, I., V. Ramesh, and Robert L. Glass, "Research in information systems: An empirical study of diversity in the discipline and its journal," *Journal of Management Information Systems* 19, 2 (2002), 129-174.
- [4] Martin, Eppler and Mengis Jeanne, "The Concept of Information Overload: A Review of Literature from Organization Science, Accounting, Marketing, MIS, and Related Disciplines," *Information Society* 20, 5 (2004), 325-344,
- [5] Zhang, Ping and Na Li Jeanne, "The Intellectual Development of Human-Computer Interaction Research: A Critical Assessment of the MIS Literature (1990~2002)," *Journal of the Association for Information Systems* 11, 6 (2005), 227-291.
- [6] Yu, Donghui and Lihua Huang, "Review of information management and information system research in mainland China," *Science Research Management* 25, 3 (2004), 86-93.
- [7] Zheng, Daqing, Yonggang He, Yan Chu, and Lihua Huang, "Compared Research of Information Systems Research Trend between Mainland China and International," *Journal of Fudan University (Natural Science)* 45, 6 (2006), 577-583.
- [8] Zuo, Meiyun, Jiye Mao, and Xi Lin, "A Survey of Research in Management Information Systems by Chinese University Teachers," *Chinese Journal of Management* 5, 3 (2008), 430-438.
- [9] <http://www.isworld.org/csaunders/rankings.htm>.
- [10] Rainer, K. and M. Miller, "Examining differences across journal rankings," *Communications of the ACM* 48, 2 (2005), 91-94.
- [11] Richard L. Baskerville and Michael D. Myers, "Information systems as a reference discipline," *MIS Quarterly* 26, 1 (2002), 1-14.
- [12] Van Horn, R. L., "Empirical studies of management information systems," *Data Base* 5, 4 (1973), 172-180.
- [13] Lai, V. S. and R. K. Mahapatra, "Exploring the research in information technol-

- ogy implementation," *Information and Management* 32, 4 (1997), 187-201.
- [14] Teng, J. T. C. and D. F. Galletta, "MIS research directions: A survey of researchers' views," *Data Base* 21, 3 (1990), 1-10.
- [15] Ji, Shaobo, Qingfei Min, and Weihe Han, "Overview of information systems research in China and international comparison," *Journal of Management Sciences* 9, 2 (2006), 76-85.