

Association for Information Systems AIS Electronic Library (AISeL)

AMCIS 2001 Proceedings

Americas Conference on Information Systems
(AMCIS)

December 2001

Quality of MIS Quarterly Over the Last Decade, 1989-1998: A Citation Analysis

Pairin Katerattanakul
Western Michigan University

Soongoo Hong
Texas A&M International University

Follow this and additional works at: <http://aisel.aisnet.org/amcis2001>

Recommended Citation

Katerattanakul, Pairin and Hong, Soongoo, "Quality of MIS Quarterly Over the Last Decade, 1989-1998: A Citation Analysis" (2001).
AMCIS 2001 Proceedings. 420.
<http://aisel.aisnet.org/amcis2001/420>

This material is brought to you by the Americas Conference on Information Systems (AMCIS) at AIS Electronic Library (AISeL). It has been accepted for inclusion in AMCIS 2001 Proceedings by an authorized administrator of AIS Electronic Library (AISeL). For more information, please contact elibrary@aisnet.org.

QUALITY OF *MIS QUARTERLY* OVER THE LAST DECADE, 1989-1998: A CITATION ANALYSIS

Pairin Katerattanakul
Western Michigan University
pairin@wmich.edu

Soongoo Hong
Texas A&M International University
shong@tamiu.edu

Abstract

This study employed a citation analysis to assess the quality of MIS Quarterly. Citations made to the articles published in MIS Quarterly in 1989-1998 were collected. Seven citation-based criteria of journal quality were computed. When compared to the same criteria of the journals from other disciplines, these citation-based criteria supported the argument made by several well-known IS researchers and suggested that quality of MIS Quarterly is comparable to that of other disciplines.

Keywords: Journal quality, *MIS Quarterly*, IS discipline, citation analysis

Introduction

As the “new-kid on the block,” the emergence of IS as a discipline faced many challenges, obstacles, and problems. For example, the rigor of IS research was sometimes questioned by other business school faculty who judged IS research to be methodologically weak (Watson et al. 1999). In contrast, a series of IS studies (Culnan 1986; Culnan 1987) suggested that IS has made significant progress toward a cumulative research tradition. Additionally, the number of journals specifically dedicated to IS research has been increasing. This growing number of IS-specific journals provides more publication outlets and encourages innovative and different kinds of IS research. It is also believed by many well-known IS researchers that the quality of IS academic journals is increasing and is comparable to that of other disciplines (Watson et al. 1999).

Quality of the IS/IS-related journals has been evaluated for almost two decades by different methodologies (e.g., Cooper et al. 1993; Holsapple et al. 1994; Walczak 1999). Unfortunately, none of the previous studies has provided any empirical data to support the argument, made by several well-known IS researchers, that quality of IS academic journals is comparable to that of other disciplines (Watson et al. 1999).

This Study

This current study is different from any other previous studies. It did not attempt to rank the IS/IS-related journals; but, it employed a citation analysis to assess the quality of *MIS Quarterly (MISQ)*, one of the top-ranked IS journals, and to compare this assessment to the journals from other disciplines. Citation analysis is a well-established procedure for examining knowledge exchange (Garfield 1979). It has been suggested as an objective method for assessing journal quality or influence (Salancik 1986).

The use of citation analysis within IS research is not new. Several IS researchers (e.g., Cooper et al. 1993; Holsapple et al. 1994) have employed this technique in their studies. However, most past research might be better termed “reference analysis,” since the unit of analysis has been the references in, rather than the citations of, an article; examining the references in a single journal is useful for identifying what disciplines influence that journal, but not for identifying that journal’s influence on others (Cote et al. 1991). Thus, this current study employed the citation analysis by using the number of citations received by the articles published in *MISQ* to assess the quality or influence of *MISQ*. Citation data are available in the *Social Science Citation Index (SSCI)* and the *Science Citation Index (SCI)* for broad range of publications. Based on these citation data, seven citation-based criteria of journal quality were computed.

Citations per article: Citations per article is the average number of citations received per article published in each year.

$$\text{Citations per article} = \frac{\text{number of citations received by articles published in based year}}{\text{number of articles published in based year}}$$

Un-cited ratio: This is the percentage of the un-cited articles published in each year.

$$\text{Un-cited ratio} = \frac{\text{number of un-cited articles published in base year}}{\text{number of articles published in base year}} \times 100$$

20 Citations or more: This is the percentage of the articles, published in each year, that have been cited 20 times or more.

$$\text{20 Citations or more ratio} = \frac{\text{number of articles, in based year, receiving 20 citations or more}}{\text{number of articles published in based year}} \times 100$$

Annual mean citation rate per article: This index provides a normalize quality index of all the articles published in each year. It is the ratio of average number of citations received per article published in each year and number of years since publication.

$$\text{Annual mean citation rate per article} = \frac{\text{number of citations received by articles published in based year}}{\text{number of articles published in based year} \times \text{years of publication}}$$

Current article impact: It is the ratio of number of the citations received by articles published in the last two years and number of the articles published in the last two years.

$$\text{Current article impact} = \frac{\text{number of citations received by articles published in last two years}}{\text{number of articles published in last two years}}$$

Cited half-life: Cited half-life for a based year is calculated as the number of years from the based year back that account for 50% of the total citations received by the cited journal in the based year. Since articles that are cited over a long time period gain in status and prestige, a journal that carries a large number of such long-lasting articles achieves recognition for its quality and impact (Zinkhan and Leigh 1999). For the year 2000, there were totally 609 citations made to the *MISQ* target articles by the articles published in this year. The cited half-life for the *MISQ* for the year 2000 is six years; that is, half of the citations (305 citations) made to the *MISQ* target article by the articles published in the year 2000 were made to the *MISQ* target articles that were published before or in the year 1994.

Cited-to-Citing ratio: Cited count is a count of the citations to a journal in a based year (Garfield 1979). Citing count is a count of the references made by a specific journal to other journals in a based year (Zinkhan and Leigh 1999). Higher cited-to-citing ratio reflects that the journal is a knowledge source, rather than a knowledge storer.

$$\text{Cited-to-Citing ratio} = \frac{\text{number of citations made to the articles published in based year}}{\text{number of references provided in the articles published in based year}}$$

Methodology and Results

We compiled a list of 251 *MISQ* articles published during 1989-1998. The number of references provided in each of these 251 *MISQ* articles was also recorded. Then, another list of the citations, to each of the 251 *MISQ* articles, made by articles published during 1991-2000 was compiled. The two-year lag time between publication of an article and citations of that article has been used to ensure a reasonable citation history for analysis (Cote et al. 1991). Hamilton and Ives (1982) also found that the modal elapsed time between IS article publication and citation to be about two years. There were totally 3,462 citations made to those 251 *MISQ* articles. The collected citation data were presented in Table 1 and 2.

Citations per article (see Table 1) was highest in 1989 and lowest in 1998. In general, older articles in the journal have been cited more often than recent articles. The higher citation rate of older articles is probably due to their having more time to accumulate citations (Cote et al. 1991). In average, *MISQ* articles received 12.9 citations per article. This result is comparable to that (13.3 citations per article) of Journal of Consumer Research (JCR) (Cote et al. 1991). Only 6 percent of *MISQ* articles have never been cited. This result is significantly less than the 45 percent found in the physical sciences (Begley 1991). On the other hand, 21.9

percent of *MISQ* articles were cited 20 times or more. This result is better than the same result of other disciplines (Brown and Gardner 1985; Cote et al. 1991). The average annual mean citation rate per article is 1.98 citations per year. This result compares favorably to *SSCI* and *JCR* that have the average for cited articles of about 1.4 and 1.7 citations per year respectively (Cote et al. 1991).

Similar to citations per article, cited-to-citing ratio (see Table 1) was higher for older articles than for recent articles. The average cited-to-citing ratio for *MISQ* was 0.33 and was better than 0.32 for *Specialty Marketing and Advertising Journals (SMAJ)* and 0.22 for *Specialty Business Journals (SBJ)*; however, this average cited-to-citing ratio for *MISQ* was significantly lower than 0.92 for *General Marketing Journals (GMJ)* and 0.79 for *General Business Journals (GBJ)* (Zinkhan and Leigh 1999). The average current article impact of 1.09 for *MISQ* (see Table 2) was also significantly better than 0.46 for *SMAJ* and 0.56 for *SBJ*; but, was lower than 1.63 for *GMJ* and 1.18 for *GBJ* (Zinkhan and Leigh 1999). Finally, the average cited half-life for *MISQ* was 4.6 years (see Table 2) and was significantly lower than 8.46, 7.52, 7.33, and 7.73 years for *GMJ*, *SMAJ*, *GBJ*, and *SBJ* respectively (Zinkhan and Leigh 1999).

Table 1. Citation Data, Citations per article, Un-cited Ratio, 20 Citations or More, Annual Mean Citation Rate Per Article, and Cited-to-Citing Ratio

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	Total
Number of <i>MISQ</i> articles in 1989-1998	32	27	30	31	26	22	24	20	19	20	251
References in <i>MISQ</i> articles (Citing counts)	926	779	1,164	1,157	1,102	1,029	1,237	1,030	1,027	1,138	10,589
Citations to <i>MISQ</i> articles (Cited counts)	646	333	584	479	441	314	338	198	92	37	3,462
<i>MISQ</i> articles never been cited	4	0	1	4	2	0	0	0	0	4	15
<i>MISQ</i> articles receiving 20 citations or more	9	5	11	7	9	7	6	1	0	0	55
<i>Citation-based Criteria of Journal Quality</i>											Mean
Citations per article	20.2	12.3	19.5	15.5	17.0	14.3	14.1	9.9	4.8	1.9	12.9
Un-cited ratio (percentage)	13	0	3	13	8	0	0	0	0	20	6
20 citations or more (percentage)	28.1	18.5	36.7	22.6	34.6	31.8	25	5	0	0	21.9
Annual mean citation rate per article	1.84	1.23	2.16	1.93	2.42	2.38	2.82	2.48	1.61	0.93	1.98
Cited-to-Citing ratio	0.70	0.43	0.5	0.41	0.4	0.31	0.27	0.19	0.09	0.03	0.33

Table 2. Citation Data, Cited Half-Life, and Current Article Impact

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	Total
Citations to <i>MISQ</i> articles made by articles published in 1991-2000	36	82	141	267	330	403	523	507	564	609	3,462
Citations made to only the <i>MISQ</i> articles that were published in the last two years	35	34	50	66	58	60	81	52	36		
<i>Citation-based Criteria of Journal Quality</i>											Mean
Cited half-life (years)	2.25	3.75	3.50	3.75	4.25	4.75	5.50	5.75	6.25	6.00	4.6
Current article impact	0.59	0.6	0.82	1.16	1.21	1.3	1.84	1.33	0.92		1.09

Discussion and Conclusion

The citation-based criteria of journal quality computed in this study suggested that quality of *MISQ* is comparable to that of other disciplines. The criteria indicated that *MISQ* has lower quality score than only *general journals*. Based on nature of IS discipline, we argued that IS journals, including *MISQ*, should be considered as the *specialty journals*. When compared to other *specialty journals*, *MISQ* has better quality score. Another quality criterion that *MISQ* has low score was the number of years for cited half-life. Regarding the fact that IS research is usually related to technologies that change rapidly, previous research involving old technologies may be less useful when new technologies emerge. This should be the reason for short cited half-life of *MISQ*.

In conclusion, this study provided the empirical evidences, based on the citation analysis, that quality of IS academic journals is comparable to that of other disciplines. The study also provided the objective method and criteria in evaluating journal quality that can be applied to any other academic journals.

References

- Begley, S. "Gridlock in the Labs," *Newsweek*, January 14, 1991, pp. 44.
- Brown, L.D. and Gardner J.C. "Using Citation Analysis to Assess the Impact of Journals and Articles on Contemporary Accounting Research," *Journal of Accounting Research*, (23:1), 1985, pp. 84-109.
- Cooper, R.B., Glair D., and Pao, M. "Communicating MIS Research: A Citation Study of Journal Influence," *Information Processing & Management*, (29:1), 1993, pp. 113-127.
- Cote, J.A., Leong, S.M., and Cote, J. "Assessing the Influence of Journal of Consumer Research: A Citation Analysis," *Journal of Consumer Research*, (18), December 1991, pp. 402-410.
- Culnan, M.J. "The Intellectual Structure of Management Information Systems, 1972-1982: A Co-Citation Analysis," *Management Science*, (32:2), 1986, pp. 156-172.
- Culnan, M.J. "Mapping the Intellectual Structure of MIS, 1980-1985: A Co-Citation Analysis," *MIS Quarterly*, (11:3), 1987, pp. 341-353.
- Garfield, E. *Citation Indexing: Its Theory and Application in Science, Technology, and Humanities*, New York: Wiley, 1979.
- Hamilton, S., and Ives, B. "Knowledge Utilization Among MIS Researchers," *MIS Quarterly*, (6:4), 1982, pp. 61-77.
- Holsapple, C.W., Johnson, L.E., Manakyan, H., and Tanner J. "Business Computing Research Journals: A Normalized Citation Analysis," *Journal of Management Information Systems*, (11:1), 1994, pp. 131-140.
- Salancik, G.R. "An Index of Subgroup Influence in Dependency Networks," *Administrative Science Quarterly*, (31), June 1986, pp. 194-211.
- Walczak, S. "A Re-Evaluation of Information Systems Publication Forums," *Journal of Computer Information Systems*, (40:1), 1999, pp. 88-97.
- Watson, H.J., Taylor, K.P., Higgins, G., Kadlec, C., and Meeks, M. "Leaders Assess the Current State of the IS Academic Discipline," *Communications of AIS*, (2:2), 1999.
- Zinkhan, G.M. and Leigh, T.W. "Assessing the Quality Ranking of the Journal of Advertising, 1986-1997," *Journal of Advertising*, (28:2), 1999, pp. 51-70.