Collaborative Authorship Trends in Information Systems

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Abstract:

This manuscript examines whether the level of collaborative research in information systems has experienced the same upward trend reflected in other disciplines of research including science, medicine, finance, management, and marketing. Results of the study indicate that the number of co-authored information systems articles have increased significantly over the past 30 years. Possible reasons for these increases are briefly discussed.

Introduction

Collaborative research has increased significantly over time across multiple disciplines. The literature on collaborative research provides clear evidence in the areas of science [4] [14] [27], medicine [10] [19] [23], social sciences [13] [21], psychology [7] [16], economics [3] [17], finance, marketing, and management [18] to support this phenomenon. Research efforts regarding the tracking of collaboration have even extended across borders, taking into consideration the cross-pollination aspect of international collaboration [12] [15].

A great deal of research concerning collaboration has been conducted to date in many disciplines. However, one area, information systems, appears to have been largely overlooked. Straub and Anderson [28] do provide some insight into information systems authorship trends over a ten year period (2000-2009). Peffers and Hui [24] provided further insight by examining authorship trends over a 15 year time period (1987-2001). This paper seeks to provide additional information to further fill this gap by examining the authorship patterns in the top information system journals over a 30 year timeframe (1980-2009).

Method

To determine whether or not a trend in information systems research collaboration existed, the number of authors for each article published in the top information systems journals over a 30 year period was obtained. The list of journals to be used was determined by referring back to previous information systems journal ranking research [22] [30]. Five journals were clearly defined as top IS outlets, Management Information Systems Quarterly (MISQ), Information Systems Research (ISR), Journal of Management Information Systems (JMIS), Communications of the ACM (CACM) and Management Science (MS). However, as indicated by Walstrom and Hardgrave [30], CACM and MS are not considered “pure” IS

journals. Therefore, they were eliminated from the list, leaving three top ranked "pure" IS journals for analysis.

The three journals were then examined regarding the number of authors per article. Authorship categories were noted as sole author, two authors, three authors, four authors, or five or more authors. The 30-year timeframe to be examined, 1980-2009, was only completely available for one of the journals, MISQ. JMIS began publication in 1984, which only allowed for 26 years of data. ISR began publication in 1990, resulting in a 20-year timeframe of data. For comparison purposes, three specific, 10-year timeframes were established: 1980-1989, 1990-1999, and 2000-2009.

Results

A total of 2,008 articles were examined. Of these, 420 articles were from ISR, 846 were from JMIS, and 742 were from MISQ. The number of sole author articles as a percentage of articles published for all three journals decreased over time and the average number of authors per article increased (See Table 1).

Analysis of variance (ANOVA) was computed to determine if significant differences in the mean number of authors occurred between the three timeframes for each journal. The results can be found in Table 2. With the exception of the timeframe between 1990-1999 and 2000-2009 for MISQ, the ANOVA results indicate statistically significant differences in the average number of authors between timeframes.

Discussion and Conclusion

The results show a clear upward trend of collaboration in information systems research. Gelman and Gibelman [13] suggest that increased scholarly production is a driving factor behind collaborative efforts. Others indicate that in the face of increasing expectations in the three major aspects of academia, scholarship, teaching, and service, faculty are more or less forced to collaborate on research in order to meet the demands placed upon them [1] [8] [26]. Pitt [25, p. 333] suggests that two major benefits of collaboration include "a reduction in workload with an inverse gain in productivity and output" and an increased level of idea generation. Pitt's suggestions are supported by Taylor's [29] study on co-authorship among library science scholars which indicated benefits include "Co-author provided valuable ideas" (8.1 out of a possible 10) and "Division of labor" (7.1 out of a possible 10). An "Additional publication for promotion/tenure" (6.5 out of a possible 10) was also noted.

On the surface, collaboration appears to be a win-win situation for the authors. However, it has been noted [6] [11] that collaboration may not always be well received by administrators and a lack of sole authored articles in top journals may be used as a reason for denial of tenure. This viewpoint could be especially detrimental for those faculty in the information systems field because the number of top journals is limited, making it difficult for faculty to obtain a sole authorship [2] [5] [9] [20].

Additional research on the subject of collaborative research specific to information systems is necessary. Why do information systems scholars embark on collaborative research efforts? What are the major benefits for information systems scholars? How do administrators feel about collaborative research efforts? The apparent increase in collaborative information systems research, coupled with the increasing expectations on faculty and possible suspicion of collaborative research by administrators suggest an eventual collision. At that time, faculty and administrators will be forced to reevaluate the role of collaborative research and having answers to the previous questions could help mitigate the process.

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Table 1
Number of Authors and Percentage of Articles

Journal	Time Period	# Articles	1 Author	2 Authors	3 Authors	4 Authors	> 4 Authors	Ave # Authors
ISR	1990-1999	185	32 (17%)	107 (58%)	33 (18%)	9 (5%)	4 (2%)	2.18
	2000-2009	235	21 (9%)	97 (41%)	87 (37%)	24 (10%)	6 (3%)	2.57
JMIS	1984-1989	144	53 (37%)	65 (45%)	18 (13%)	5 (3%)	3 (2%)	1.9
	1990-1999	326	57 (17%)	144 (44%)	91 (28%)	24 (7%)	10 (3%)	2.36
	2000-2009	376	47 (13%)	123 (33%)	149 (40%)	40 (11%)	17 (5%)	2.63
MISQ	1980-1989	253	95 (38%)	118 (47%)	33 (13%)	4 (2%)	3 (1%)	1.79
	1990-1999	218	37 (17%)	100 (46%)	62 (28%)	16 (7%)	3 (1%)	2.31
	2000-2009	271	26 (10%)	137 (51%)	73 (27%)	26 (10%)	9 (3%)	2.46
Period	1980-1989	397	148 (37%)	183 (46%)	51 (13%)	9 (2%)	6 (2%)	1.85
Totals	1990-1999	729	126 (17%)	351 (48%)	186 (26%)	49 (7%)	17 (2%)	2.30
	2000-2009	882	94 (11%)	357 (40%)	309 (35%)	90 (10%)	32 (4%)	2.57
Totals		2008	368	891	546	148	55	2.33

Table 2
ANOVA Results with Average Number
of Authors as Dependent Variable

Journal	1980-1989 Compared to 1990-1999		1990-1999 Compared to 2000-2009		1980-1989 Compared to 2000-2009	
	F	P-value	F	P-value	F	P-value
MISQ	31.602	<.001	2.595	0.111	74.798	<.001
ISR	-	-	19.966	<.001	-	-
JMIS	22.852	<.001	7.719	<.01	38.32	<.001

Note: IRS did not begin publication until 1990 so no comparisons could be made between 1980-1989 and 1990-1999 or 1980-1989 and 2000-2009.