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Publication Pattern of MIS Literature: An Analysis of MISQ Journal

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Abstract:

The present study encompasses a bibliometric sketch of the articles published in "Management Information Systems Quarterly" (MISQ) from 1995 – 2009. It examines and presents an analysis of 596 research papers. The study takes note scientifically from various angles such as: growth of literature, authorship patterns, geographical distribution of publications, distribution by journal, and ranking pattern, pagination and illustration pattern etc. Moreover, the degree of collaboration is also calculated using the formula given by Subramanian. The average no of articles published per volume is 39.7 and per issue is 9.9; the percentage of multi-authored papers is 67 and that of single authored papers is 33; the most prolific country i.e. USA has published 48.15% of

papers while most productive institution Indiana University (USA) tops the list with 11 number of publications.

Keywords: Bibliometrics, Management Information System (MIS), MISQ

Introduction:

The Management Information Systems Quarterly (MISQ) is a peer reviewed academic scholarly journal published by the Management Information Systems Research Center, Carlson School of Management, University of Minnesota. MISQ covers research in the areas of management information systems and information technology. It was established in 1977 and is widely regarded as one of the most prestigious journals in the information systems discipline. The journal had the highest impact factor among all the peer-reviewed academic journals in the field of Business Management. According to the Journal Citation Report, the journal has an impact factor of 4.659 during the year 2012.

Objectives:

The present study has been undertaken with the following objectives.

1. To find the chronological distribution and ranking of the articles in the journal.
2. To find the publication pattern of the articles in the journal
3. To find out the Authorship pattern of the articles.
4. To prepare a ranked list of productive countries and institutions of affiliation.
5. To prepare a list of top journals being cited by the authors during the study period.
6. To find out the pagination pattern of the articles.
7. To study the pattern of illustrations of the articles.

The data and the method:

For carrying out the present work, "EBSCOhost Research Databases" is used as the source database for MIS journal literature. EBSCOhost is a powerful online reference system accessible via the Internet. It offers a variety of proprietary full text databases and popular databases from leading information providers. The comprehensive databases of EBSCO range from general reference collections to specially designed, subject-specific databases (in case of present study, MIS is the subject area) for public, academic, medical, corporate and school libraries. There are around 20+ journals available in the "Business Source Corporate" database of EBSCO dates as far back as 1965 covering MIS literature and MISQ Journal has been taken as the source journal for carrying out the present work.

For each volume and issue of MISQ the titles, names of authors, number of authorship, number of references, author's institutional affiliation and country, type of article, subject of article, length (pages) of article, no. of figures, charts and tables, author supplied keywords and abstracts were downloaded to a special designed

template in MS excel (Sample attached in Annexure – A). The total number articles published during the period of study, average number of articles per volume and issue of the Journal are depicted in Table 1.

Table 1 - Average number of articles per volume and issue:

Title	Bibliographic Records taken from EBSCO	Vol. No.	Total No. Vol.	Total No. Issues	Total No. of Articles [N]	Avg. No. Articles per Vol.	Avg. No. Articles per Issue
MISQ	1995 - 2009	19-33	15	60	596	39.7	9.9

Data analysis and Interpretation:

Chronological Distribution and Ranking of Articles:

Table – 2 depicts the number of papers published in the MISQ Journal during 1995 to 2009 along with respective cumulative figures and percentage. The rank list in table 2 reflects that the highest number of articles published during 1999 which is 52 (8.72%) and lowest in 2003 which is 27 (4.53%). Further the second and third highest no. of articles i.e., 50 and 49 are published during the year 1998 and 2000 respectively. This indicates that the publication pattern is stable with respect to the average number of papers published per year i.e. 39.73 as shown in Table 1.

Table 2 - Year wise Distribution of Papers in MISQ:

SL. No.	Years	Vol. No.	Number of Papers	%	Rank	Cumulative No. of Papers	Cumulative %
1	1995	19	38	6.37	7	38	6.38
2	1996	20	45	7.55	5	83	13.93
3	1997	21	34	5.7	10	117	19.63
4	1998	22	50	8.38	2	167	28.02
5	1999	23	52 (Highest)	8.72	1	219	36.74
6	2000	24	49	8.22	3	268	44.97
7	2001	25	33	5.53	11	301	50.50
8	2002	26	28	4.69	13	329	55.20
9	2003	27	27 (Lowest)	4.53	14	356	59.73
10	2004	28	31	5.2	12	387	64.93
11	2005	29	36	6.04	9	423	70.97
12	2006	30	48	8.05	4	471	79.03
13	2007	31	37	6.2	8	508	85.23
14	2008	32	40	6.71	6	548	91.95
15	2009	33	48	8.05	4	596	100.00
Total	15 Years	15 Volumes	596	100	*		

Distribution and Ranking of Publication Pattern:
Table 3 shows the types of publications of MIS literature published in MISQ journal. Out of 596 contributions, the highest were "Research Articles" with 520 (87.24%) contributions followed by "Abstracts" with 44 (7.38%) and "Editorials" with 26 (4.36%) contributions respectively. The categories "Opinion", "Erratum" & "Essay" are ranked 4th, 5th and 6th with 03 (0.50%), 02 (0.33%) and 01 (0.16%) contributions respectively.

Table 3 - Ranking and Distribution of types of publications:

SL. No.	MISQ						
	Document Type	**1995-1999**	**2000-2004**	**2005-2009**	**Number of Documents**	**%**	**Rank**
1	Article	169	158	193	520	87.24	1
2	Abstract	39	05	0	44	7.38	2
3	Editorial	11	04	11	26	4.36	3
4	Opinion	0	0	03	03	0.50	4
5	Erratum	0	01	01	02	0.33	5
6	Essay	0	0	01	01	0.16	6
Total		219 (36.74%)	168 (28.18%)	209 (35.06%)	596	100	*

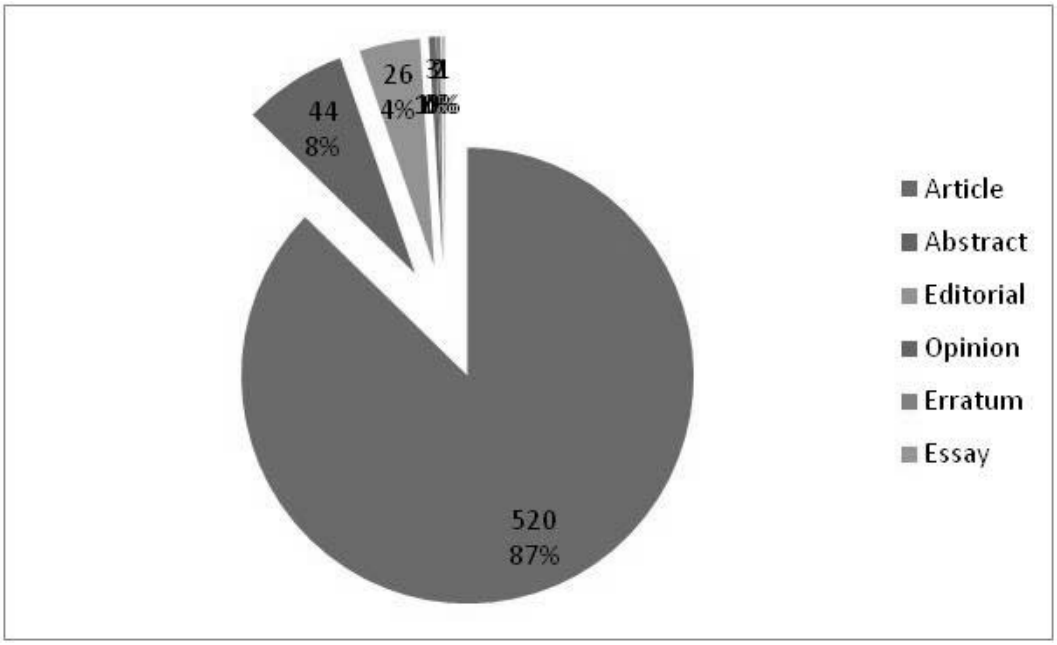

Figure 1 - Distribution of types of publications:

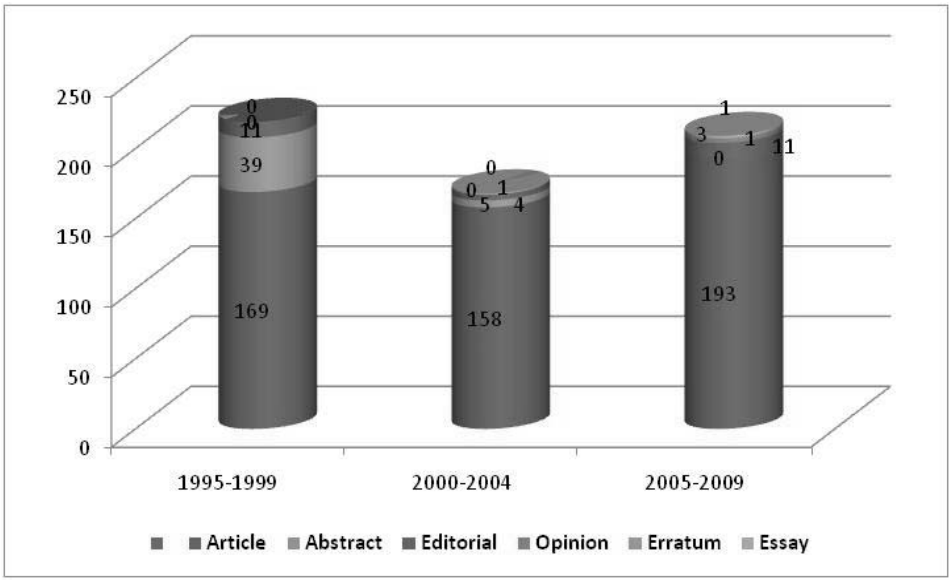

Figure 2 - Chronological Distribution of document types:

Authorship pattern and Degree of Collaboration:

Table 4 deals with authorship pattern in the journal. It was observed that total 1185 number of authors contributed 596 no. of articles in MISQ during the year 1995 to 2009 which reflects that the average number of papers per author is 0.50. Further it is observed that, the total 596 papers are produced by 228 numbers of single authors and 368 numbers of multiple authors during the year 1995 to 2009. The total time period of study i.e. 1995 to 2009 was divided into 3 zones and each having 5 year durations like 1995-1999, 2000-2004 and 2005-2009. It was observed that during the period of 1995-1999 highest 219 numbers of articles were published with 116 number of single and 103 number of multiple authorship. Similarly during the period 2000-2004 and 2005-2009 number of articles published are 168 and 209 respectively with single and multiple authorship 76 , 92 and 36, 173. It indicates that the collaborative research is at the front.

Table 4 - Authorship pattern and Degree of Collaboration:

Year	MISQ (Authorship Pattern of Papers)						
	No. of Single Author	**No. of Multiple Authors**	**No. of Authors Considering 1st Author**	**No. of Authors Considering all Authors**	**No. of Papers**	**Degree of Collaboration**	**Average Papers per Author**
1995-1999	116	103	219	382	219	0.47	0.57
2000-2004	76	92	168	313	168	0.54	0.53
2005-2009	36	173	209	490	209	0.82	0.42
Total	228	368	596	1185	596	0.61	0.50

The degree of collaboration among authors was calculated using Subramanian's formula (Subramanian, 1983) and depicted in Table 4. The formula is as follows:

$$DC = Nm/(Nm+Ns)$$

Where,

C = Degree of Collaboration
Nm = Number of Multi Authored Contributions
Ns = Number of Single Authored Contributions

In the present study the value of DC (i.e. collaborative co-efficient) is 0.61 [368/ (368+228)].

Thus it is deduced that multi-authored contributions occupy the prominent position. It is also observed that the degree of collaboration (DC) is increasing in the year range under study. The distribution of Degree of Collaboration/collaborative co-efficient over 3 time zones (i.e. 1995-99, 2000-04 and 2005-09) is 0.47, 0.54 and 0.82 respectively. The increasing degree of collaboration indicates that MISQ has accommodated more number of collaborative works than single authored ones over time.

Country-wise Distribution of Literature:

The table - 5 shows the country wise distribution of papers. Authors from 221 countries contributed 596 papers in the MISQ during the year 1995 to 2009. Literature production from USA is highest (287), which is 48.15 percent of the total. Canada and UK are 2nd and 3rd respectively in terms of MIS literature production with counts of 5.87% and 2.18% respectively. As large numbers of papers are published from USA, it reflects the contribution and dominance of USA over its other counterparts.

Table 5 - Country-wise Distribution of Literature:

SL. No.	**MISQ**			
	Country	**Literature Production**	**%**	**Rank**
1	USA	287	48.15	1
2	Canada	35	5.87	2
3	UK	13	2.18	3
4	Hong Kong	10	1.67	4
5	Australia	08	1.34	5
6	Singapore	08	1.34	5
7	The Netherlands	06	1.00	6
8	Israel	04	0.67	7
9	New Zealand	03	0.50	8
10	Norman	03	0.50	8
11	Norway	03	0.50	8
12	Finland	02	0.33	9
13	France	02	0.33	9

14	Germany	02	0.33	9
15	Ireland	02	0.33	9
16	Korea	02	0.33	9
17	Sweden	02	0.33	9
18	Austin	01	0.16	10
19	Denmark	01	0.16	10
20	Georgia	01	0.16	10
21	Italy	01	0.16	10
22	Los Angles	01	0.16	10
23	Saudi Arabia	01	0.16	10
	Others	198	33.22	*
	Total	596	100	*

Collaborative Pattern of Literature:

The collaboration pattern which was observed during the period of the study is depicted in table- 6. Inter Institutional, Intra Institutional, Inter Country and Intra Country pattern of collaboration was observed. USA topped the list with 287 numbers of articles and the rate of Inter-Institutional and Intra-Institutional collaboration was 224 and 63 respectively. The rates of Inter-Country and Intra-Country collaboration were 43 and 244 respectively. All total 305 inter - institutional and 93 intra institutional collaboration and 99 inter - country and 299 intra - country mode of collaboration was observed. There is a clear indication of author preference of collaboration with the peers.

Table 6 - Collaboration Pattern of Literature:

SL. No.	**MISQ**							
	Country	**Collaboration**				**Total Literature Production**	**%**	**Rank**
		Inter-Institutional	**Intra-Institutional**	**Inter-Country**	**Intra-country**			
1	USA	224	63	43	244	287	48.15	1
2	Canada	27	08	12	23	35	5.87	2
3	UK	10	03	08	05	13	2.18	3
4	Hong Kong	09	01	07	03	10	1.67	4
5	Australia	05	03	04	04	08	1.34	5
6	Singapore	08	0	08	0	08	1.34	5
7	The Netherlands	03	03	02	04	06	1.00	6
8	Israel	01	03	01	03	04	0.67	7
9	New Zealand	02	01	02	01	03	0.50	8
10	Norman	03	0	02	01	03	0.50	8
11	Norway	01	02	0	03	03	0.50	8
12	Finland	01	01	01	01	02	0.33	9
13	France	02	0	01	01	02	0.33	9
14	Germany	01	01	0	02	02	0.33	9
15	Ireland	01	01	01	01	02	0.33	9

16	Korea	02	0	02	0	02	0.33	9
17	Sweden	02	0	02	0	02	0.33	9
18	Austin	0	01	0	01	01	0.16	10
19	Denmark	01	0	01	0	01	0.16	10
20	Georgia	01	0	01	0	01	0.16	10
21	Italy	01	0	01	0	01	0.16	10
22	Los Angles	0	01	0	01	01	0.16	10
23	Saudi Arabia	0	01	0	01	01	0.16	10
	Others	*	*	*	*	198	33.22	*
	Total	305	93	99	299	596	100	*
	Grand Total	305+93+198=596		99+299+198=596				

Ranking Pattern of Prolific Institutions:

The table-7, list out the most prolific institutions in the field of MIS research output. Indiana University (USA) tops the list with 11 articles, whereas Georgia State University and University of Maryland both ranked 2nd in the list. The clear indication of dominance of universities belonging to USA is reflected in the area of research in MIS.

Table 7 - Ranking Pattern of 25 Prolific Institutions:

SL. No.	**MISQ**				
	Name of Institutions	**Country Of Origin**	**Literature Production**	**%**	**Rank**
1	Indiana University	USA	11	1.84	1
2	Georgia State University	USA	10	1.67	2
3	University of Maryland	USA	10	1.67	2
4	University of South Florida	USA	08	1.34	3
5	University of Georgia	USA	08	1.34	3
7	University of California	USA	07	1.17	4
8	University of Texas	USA	07	1.17	4
9	Florida State University	USA	06	1.00	5
10	University of Hawaii	USA	06	1.00	5
11	University of Minnesota	USA	06	1.00	5
12	University of Oklahoma	USA	06	1.00	5
13	Carnegie Mellon University	USA	05	0.83	6
14	Drexel University	USA	05	0.83	6
15	Nanyang Technological University	Singapore	05	0.83	6
16	National University of Singapore	Singapore	05	0.83	6
17	New York University	USA	05	0.83	6
19	Southern Methodist University	USA	05	0.83	6
20	Texas A&M University	USA	05	0.83	6
21	University of British Columbia	Canada	05	0.83	6
22	University of Calgary	Canada	05	0.83	6

23	University of Colorado	USA	05	0.83	6
24	University of Houston	USA	05	0.83	6
25	University of Oslo	Norway	05	0.83	6

Pagination Pattern of Papers:

The table – 8 depicts the pagination pattern in the MISQ journal. All the 596 articles comprising of 10210 of pages of which 267 numbers of papers are having 16-30 pages which is 44.79 % of the total. Only 1 article constitutes 46-60 pages and 3 constitute 61-75 pages. Average pages for total papers (596) are 17. More than half the numbers of papers are falling within 1-15 and 16-30 page counts.

Table 8 - Pagination Pattern of Papers

SL. No.	MISQ				
	Pagination	**Number of Paper**	**%**	**Whole Page Account**	**Average Pages per Paper**
1	1-15	251	42.11	1153	05
2	16-30	267	44.79	6267	23
3	31-45	74	12.41	2538	34
4	46-60	01	0.16	54	54
5	61-75	03	0.50	198	66
	Total	596	100	10210	17

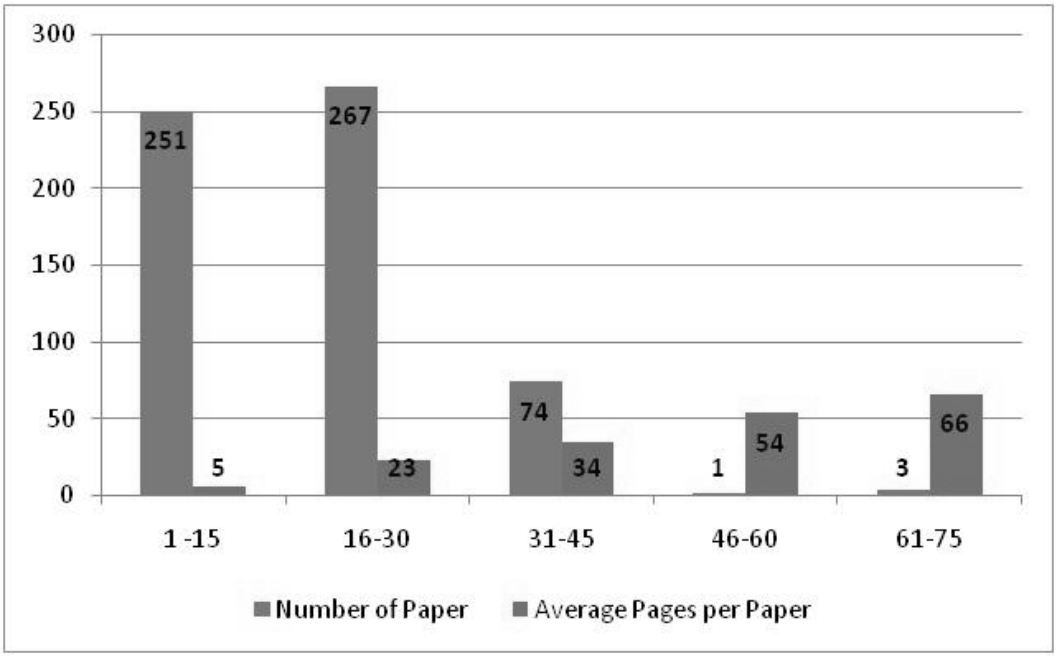

Figure 3 – Pagination Distribution across the papers:

Illustrations Pattern of Papers:

Table 9 - Chart, Diagram & Graphs in Papers:

SL. No	Year	A (Description of Charts)				B (Description of Diagrams)				C (Description of Graphs)			
		Number of Papers without Chart	Number of Papers with Chart	Total Number of Charts	Average per Paper	Number of Papers without Diagram	Number of Papers with Diagram	Total Number of Diagrams	Average per Paper	Number of Papers without Graph	Number of Papers with Graph	Total Number of Graphs	Average per Paper
1	1995	16	22	104	4.72	21	17	45	2.64	33	05	35	7.00
2	1996	26	19	87	4.57	34	11	27	2.45	42	03	17	5.66
3	1997	16	18	75	4.16	24	10	28	2.8	28	06	13	2.16
4	1998	36	14	88	6.28	35	15	38	2.53	40	10	29	2.9
5	1999	41	11	63	5.72	31	21	42	2.00	47	05	14	2.8
6	2000	49	0	0	0	31	18	57	3.16	43	06	12	2.00
7	2001	33	0	0	0	22	11	29	2.63	31	02	03	1.5
8	2002	28	0	0	0	17	11	35	3.18	27	01	01	1.00
9	2003	22	05	34	6.8	10	17	36	2.11	23	04	06	1.5
10	2004	08	23	109	4.73	10	21	50	2.38	25	06	19	3.16
11	2005	10	26	149	5.73	11	25	39	1.56	29	07	14	2.00
12	2006	07	41	270	6.58	11	37	94	2.54	36	12	27	2.25
13	2007	05	32	187	5.84	13	24	85	3.54	29	08	19	2.37
14	2008	01	39	234	6.00	05	35	97	2.77	33	07	26	3.71
15	2009	13	35	266	7.6	17	31	93	3.00	30	18	45	2.5

The above table depicts the Charts, Diagrams and Graphs mentioned by authors in the articles. It was observed all the articles published every year under study i.e. from 1995 to 2009 are comprising of Charts, Diagrams and Graphs. The articles published during the year 2001-2002 were having no charts. Highest number of charts (270) are present in 48 number of papers published during 2006. As far as the diagrams in the articles are concerned, it is observed that the articles published during the year 2008 are having highest number of diagrams i.e., 97 and the lowest which is 27 is in the year 1996. Total 48 articles published during the year 2009 bear the highest number of Graphs which is 45. The year 2002 contributed 28 articles with lowest number i.e., 1 number of Graph. The presence of Graphs, Charts and Tables in any intellectual output shows the contributors creativity, innovation and presentation skills. This is clearly indicated in the area of study.

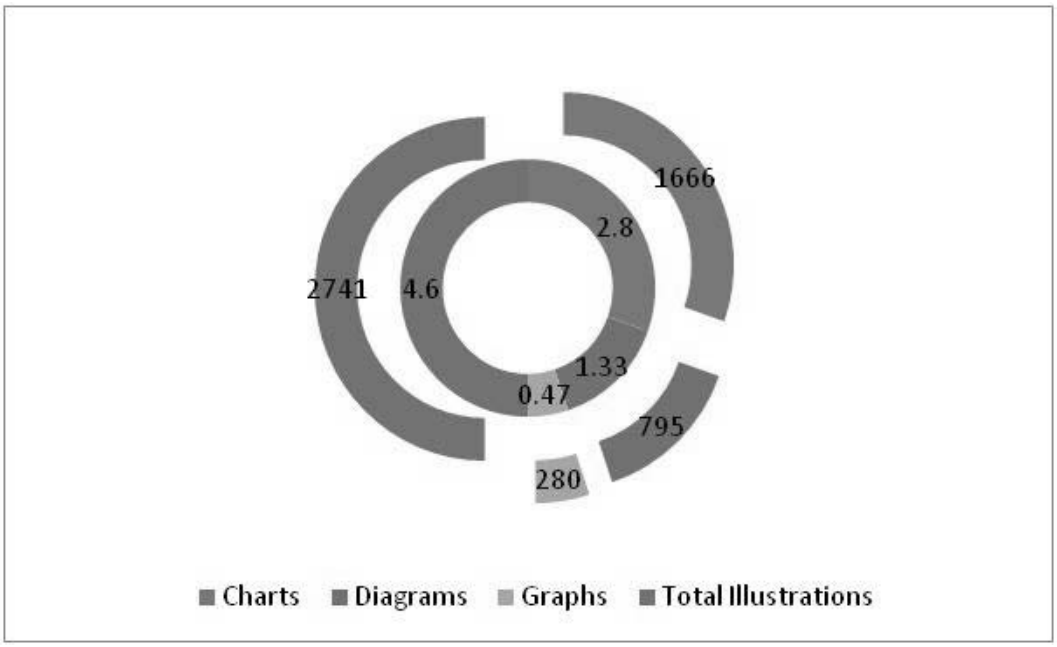

Figure 4 – Illustrations Pattern of Papers:

The figure - 4 represents the distribution of Illustrations i.e. Charts, Diagrams and Graphs across all 596 MISQ papers. The outer ring reflects the total number Charts, Diagrams and Graphs across the papers while the inner ring shows the average number of respective illustrations per paper. It is observed that appearances of Charts are more in numbers than Diagrams and Graphs.

Conclusion:

The present paper attempts to identify the bibliometric characteristics of MISQ articles. On the basis of our observation the following findings are drawn from the study.

The publication of articles per volume is stable in MISQ journal with respect to the average number of papers published per year i.e. 39.73.

Most numbers of papers are falling within the range of 1-15 and 16-30 page counts and the average number of page count for all the articles is 17.

Authorship pattern and Degree of Collaboration (o.61) suggests that the collaborative research is at the front.

The chronological increasing degree of collaboration indicates that MISQ has accommodated more number of collaborative works rather than single authored works over time which reflects research is a collaborative effort.

As large numbers of papers are published from USA, it reflects the contribution and dominance of USA over its other counterparts. Similarly the ranking of productive Institutions represent dominance of universities belonging to USA in the area of research in MIS.

All total 305 inter-institutional along with 93 intra institutional collaboration and 99 inter-country and 299 intra-country mode of collaboration was observed. There is a clear indication of author preference of collaboration with the peers.

The pattern of Graphs, Charts and Tables in any intellectual output shows the contributors creativity, innovation and analytical skills. This is clearly also reflected in the literature of MIS as the average number of illustrations is 4.6 per paper.

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Annexure – A

Template of data collection

A	B	C	D
J/Vol/Iss/A.no.	Original Article	Times Cited in this Database	Cited References
MISQ/20/4/1	**Title:**		
	Editor's Comments.	0	0
	Authors:		
	Zmud, Bob		
	Source:		
	MIS Quarterly; Dec96, Vol. 20 Issue 4, Preceding p385-385, 4p		
	Document Type:		
	Article		
MISQ/20/4/2	**Title:**		
	Change Agentry - the Next IS Frontier.	0	0
	Source:		
	MIS Quarterly; Dec96, Vol. 20 Issue 4, Preceding p385-385, 1/2p		
	Document Type:		
	Abstract		
	Subject Terms:		
	*LEADERSHIP		
	ABSTRACTS		
	Abstract:		
	This article presents an executive overview of the article "Change Agentry -- the Next IS Frontier," by M. Lynne Markus and Robert I. Benjamin.		
MISQ/20/4/3	**Title:**		
	The Contribution of Shared Knowledge to IS Group Performance.	0	0
	Source:		
	MIS Quarterly; Dec96, Vol. 20 Issue 4, Preceding p385-385, 1/2p		
	Document Type:		
	Abstract		
	Subject Terms:		
	*TEAMS in the workplace		
	ABSTRACTS		