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Trend evaluation and comparison of the use and value of GL in core demography and computer science journals

Rosa Di Cesare, Roberta Ruggieri, CNR-IRPPS

Silvia Giannini, Stefania Biagioni, CNR-ISTI



**ISTITUTO DI SCIENZA E TECNOLOGIE
DELL'INFORMAZIONE "A. FAEDO"**



**ISTITUTO DI RICERCHE SULLA POPOLAZIONE
E LE POLITICHE SOCIALI**



The idea



- To measure the impact of GL on different scientific fields
- To describe the characteristics of GL documents cited
- To ascertain any changes in GL impact on 1995 and 2003

Sampled Journals: Demography (DEM) and Computer Science-Information Systems (CS-IS)



DEM Journals				
	IF 1995 (*)	Rank 1995 (1/17)	IF 2002 (*)	Rank 2002 (1/17)
Demography	1633	1/17	2.060	2/17
Population Research & Policy Review	0.368	11/17	0.510	10/17
International Migration	0.137	16/17	0.357	14/17

All indexed by ISI, Popindex, CIRCED
 (*) ISI-JCR Social Science ed., 1995 e 2002; Category: Demography: ISI rank 1/17

CS-IS Journals				
	IF 1995 (*)	Rank 1995 (1/43)	IF 2002 (*)	Rank 2002 (1/77)
ACM Transactions on Information Systems (ACM TOIS)	1176	4/43	1385	12/77
ACM Transactions on Database Systems (ACM TODS)	0.829	9/43	0.875	27/77
Information Sciences	0.245	30/43	0.361	54/77

All indexed by ISI, INSPEC, EI Compendex
 (*) ISI-JCR Social Science ed., 1995 e 2002; Category: Computer Science-Information Systems: ISI rank 1/43 e 1/77

Table 1

Table 1 compares the IF and the rank in the “Demography” and in the “Computer Science - Information systems” categories in the two years examined

Frequency of GL use (1995 vs. 2003)

	1995		2003	
DEM Journals	Number of articles	Number of articles with GL	Number of articles	Number of articles with GL
		(%)		(%)
Demography	37	100.0	38	100.0
Popul Res Policy Rev	27	85.2	37	97.3
International Migration	21	100.0	39	97.4
Total	85	95.3	114	98.2
CS-IS Journals				
ACM TOIS	16	93.8	15	93.3
ACM TODS	12	100.0	13	86.7
Information Sciences	84	69.0	137	73.0
Total	112	75.9	167	76.0

Table 2

DEM: the frequency of GL use increased
 CS-IS: the frequency of GL use remained stable

Frequency of GL citing (1995 vs. 2003)



	1995			2003		
DEM Journals	Number of references	Number of GL references	Frequency of GL citing (%)	Number of references	Number of GL references	Frequency of GL citing (%)
Demography	1,27	237	18.7	1,795	326	18.2
Popul Res Policy Rev	779	295	37.9	1,088	210	19.3
International Migration	773	413	53.4	1,298	444	34.2
Total	2,822	945	33.5	4,181	980	23.4
CS-IS Journals						
ACM TOIS	618	71	11.5	602	127	21.1
ACM TODS	441	45	10.2	621	58	9.3
Information Sciences	1,502	172	11.5	2,649	434	16.4

Table 3

DEM: the frequency of GL citing decreased
 CS-IS: the frequency of GL citing increased

Intensity of GL use (1995 vs.2003)



	1995		2003	
DEM Journals	IF	Intensity of GL use (%)	IF	Intensity of GL use (%)
Popul Res Policy Rev	0.368	44.2	0.510	19.8
International Migration	0.137	53.4	0.357	35.4
Total		35.2		23.8
CS-IS Journals				
ACM TOIS	1.176	11.9	1.385	22.6
ACM TODS	0.829	10.2	0.875	10.7
Information Sciences	0.245	16.7	0.361	22.5
Total		14.28		21.0

Table 4

DEM: the intensity of GL use decreased; CS-IS: the intensity of GL use increased. The journal “Demography” with highest IF shows stable values for all three indicators. For the journal “ACM-TOIS” with highest IF, the only stable value is the frequency of GL use

Frequency of e-GL use (1995 vs. 2003)

		1995		Availability		2004	
DEM Journals		Number of GL references	Number of e-GL references	Frequency of e-GL use	Number of e-GL available	Number of e-GL available (%)	
Popul Res Policy Rev		295	0	0.0	0	0.0	
International Migration		413	0	0.0	0	0.0	
Total		945	0	0.0	0	0.0	
CS-IS Journals							
ACM TOIS		69	9	13.3	2	22.2	
ACM TODS		45	2	16.7	1	50.0	
Sciences		172	0	0.0	0	0.0	
Total		286	11	4.7	3	27.3	

Most of the e-GL citations were concentrated in the CS-IS field. 27% of 1995 and 82% of 2003 citations are still available.

		2003		Availability		2004	
DEM Journals		Number of GL references	Number of e-GL references	Frequency of e-GL use	Number of e-GL available	Number of e-GL available (%)	
Popul Res Policy Rev		210	12	16.7	5	41.7	
International Migration		444	58	47.4	42	72.4	
Total		980	102	35.7	72	70.6	
CS-IS Journals							
ACM TOIS		127	49	78.6	40	81.6	
ACM TODS		58	17	38.5	16	94.1	
Information Sciences		434	87	25.0	70	80.5	
Total		619	153	32.3	126	82.4	

Table 5

Distribution of GL documents by document type (1995 vs. 2003)

DEM	1995		2003	
	Number	(%)	Number	(%)
Thesis	16	1.7	30	3.1
Report	189	20.0	183	18.7
Preprint	0	0.0	0	0.0
Proc/Meeting p.	169	17.9	116	11.8
Unpublished	26	2.8	13	1.3
Technical Doc	19	2.0	21	2.1
Miscellaneous	26	2.8	53	5.4
Undefined	3	0.3	27	2.8
Home Page	0	0.0	25	2.6
Monographic book	233	24.7	236	24.1
Statistical report	264	27.9	267	27.2
Db, DI, Archive	0	0.0	9	0.9
Total	945	100.0	980	100.0

DEM - most of the cited documents were: Monographic books and Statistical reports

CS-IS - most of the cited documents were: Technical reports, Proceedings and Theses

DEM	1995		2003	
	Number	(%)	Number	(%)
Thesis	43	14.9	69	11.1
Report	85	29.5	119	19.2
Preprint	25	8.7	19	3.1
Proc/Meeting p.	72	25.0	238	38.4
Unpublished	5	1.7	1	0.2
Technical Doc	47	16.3	110	17.8
Miscellaneous	3	1.0	12	1.9
Undefined	7	2.4	11	1.8
Home Page	1	0.3	23	3.7
Monographic book	0	0.0	8	1.3
Statistical report	0	0.0	0	0.0
Db, DI, Archive	0	0.0	9	1.5
Total	288	100.0	619	100.0

Note that in 2003, in both disciplines, authors started linking citations to specific “Home Pages”

Table 6

Distribution of GL documents by date (1995 vs. 2003)

DEM Journals 1995

Date	Frequency	Cumulative frequency(%)	Date	Frequency	Cumulative frequency(%)
1995	9	1.0	2003	40	4.1
1994	84	9.8	2002	135	17.2
1993	150	25.7	2001	141	32.2
1992	100	36.3	2000	107	43.2
1991	94	46.2	1999	96	53.0
1990	97	56.5	1998	57	58.8
1989	51	61.9	1997	67	65.6
1988	63	68.6	1996	44	70.1
1987	29	71.6	1995	44	74.6
1986	29	74.7	1994	30	77.6
1985-1976	166	92.3	1993-1984	151	93.1
1975-1966	31	95.5	1983-1974	32	96.3
1965-1956	10	96.6	1973-1964	17	98.1
1955-1900	21	98.8	1963-1900	6	0.1
[s.d]	11	1.2	[s.d]	13	1.3
TOTAL	945			980	100.0

2003

DEM

1995: more than 50% of the citations were related to the last five years before 1995
 2003: more than 50% of the citations were related to the last four years before 2003

CS-IS Journals 1995

Date	Frequency	Cumulative frequency(%)	Date	Frequency	Cumulative frequency(%)
1995	18	6.3	2003	17	2.7
1994	24	14.6	2002	43	9.7
1993	35	26.7	2001	84	23.3
1992	41	41.0	2000	57	32.5
1991	49	58.0	1999	59	42.0
1990	23	66.0	1998	51	50.2
1989	14	70.8	1997	50	58.3
1988	12	75.0	1996	35	64.0
1987	10	78.5	1995	40	70.4
1986	5	80.2	1994	21	73.8
1985-1976	29	90.3	1993-1984	78	86.4
1975-1966	8	93.1	1983-1974	13	88.5
1965-1956	1	93.4	1973-1964	6	89.5
1955-1900	0	0.0	1963-1900	0	0.0
[s.d]	19	6.6	[s.d]	65	10.5
TOTAL	288			619	

2003

CS-IS

1995: more than 50% of the citations were related to the last four years before 1995
 2003: more than 50% of the citations were related to the last five years before 2003

Table 7

Distribution of Self-citations (1995 vs. 2003)

	1995		2003	
DEM Journals	Number of GL references	Number of Self-cit. (%)	Number of GL references	Number of Self-cit. (%)
Demography	237	8.9	326	4.3
Popul Res Policy Rev	295	4.4	210	5.7
International Migration	413	12.6	444	5.6
Total	945	25.9	980	15.6
CS-IS Journals				
ACM TOIS	71	23.9	127	17.3
ACM TODS	45	26.7	58	20.7
Information Sciences	172	39.5	434	22.8
Total	288	33.7	619	21.5

Table 8

Note that the journals with low IF seem to be more affected by the phenomenon of self-citing. In 2003, in both disciplinary fields the proportion of self-citations decreased