

Open Access and citation count: a CSIR case study

**11th Southern African Online Information Meeting
6-7 June 2012**

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Open Access and citation count: a CSIR case study

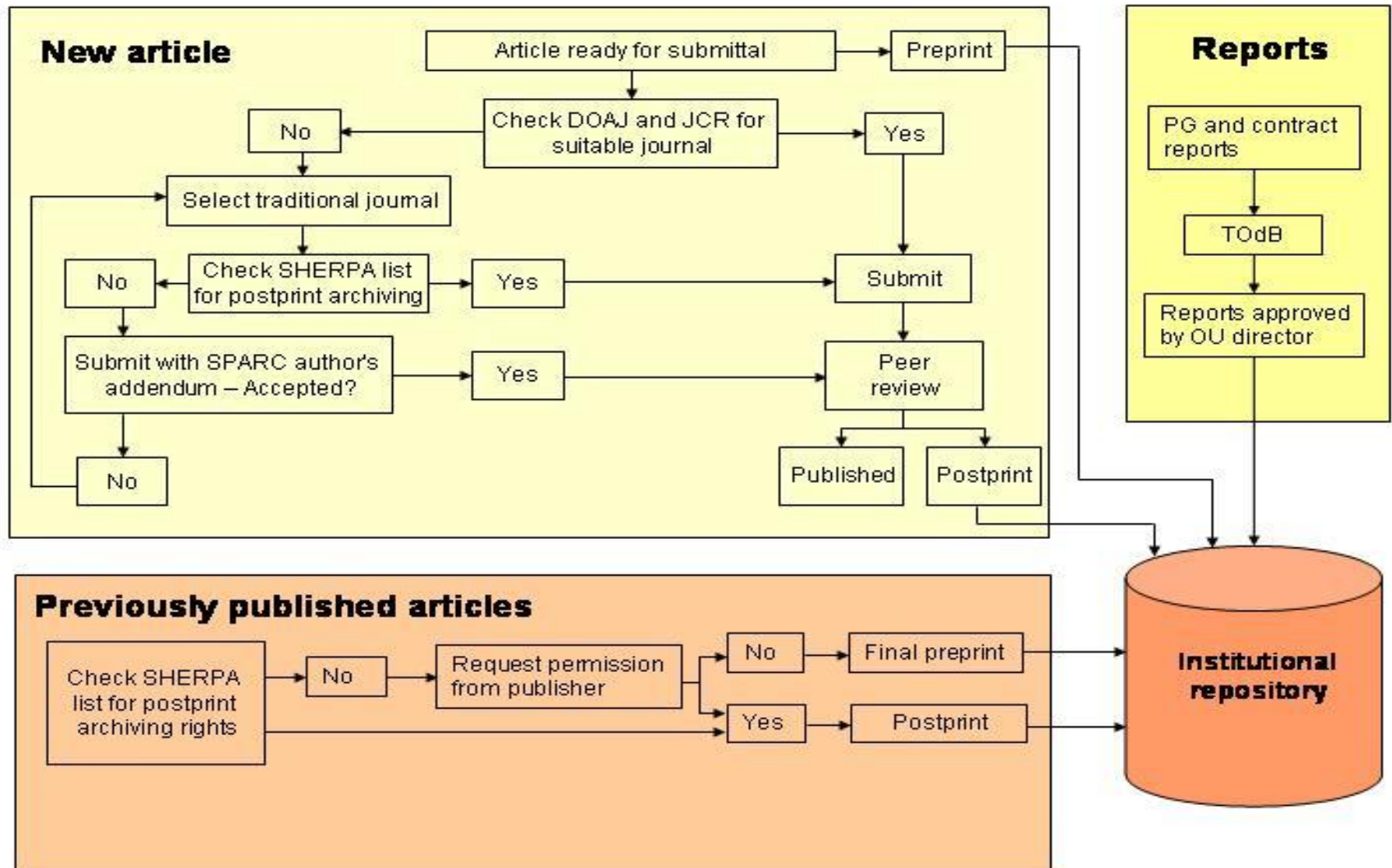
- What is Open Access?
- The impact of Open Access
- CSIR and Open Access
- A CSIR case study
- Conclusions

Introduction: What is Open Access?

According to the Budapest Open Access Initiative (2002):

- the material is freely available on **the internet**
- allowing any users to read, download, copy, distribute, print, search, or link to the full texts of these articles, use them for indexing, pass them as data to software, or use them for any other lawful purpose
- without financial, legal, or technical barriers other than those inseparable from gaining access to the internet itself.

CSIR and Open Access



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or enter first few letters:

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Issue Date	Title	Author(s)
Jun-2011	Analysing commons to improve the design of volunteered geographic information repositories	Van den Berg, H ; Coetzee, S ; Cooper, AK
2000	Breaking alibis through cell phone mapping	Schmitz, PMU ; Cooper, AK ; Davidson, A ; Rossouw, K
Oct-2008	Can the South African address standard (SANS 1883) work for small local municipalities?	Coetzee, S ; Cooper, AK
May-2011	Challenges for quality in volunteered geographical information	Cooper, AK ; Coetzee, S ; Kaczmarek, I ; Kourie, DG ; Iwaniak, A ; Kubik, T
Jan-2010	Characterization and properties of breakwater structures modelled by a physics engine	Greben, JM ; Gledhill, I ; Cooper, AK ; De Villiers, R
Jul-2004	Concepts of incremental updating and versioning	Cooper, AK ; Peled, A
Aug-2009	Contribution statistics can make to "strengthening forensic science"	Cooper, AK ; Das, S
Dec-1999	Crime clocks and target performance maps	Cooper, AK ; Gilfillan, TC ; Potgieter, MA ; Schmitz, PMU ; Du Plessis, PM
20-Apr-2006	Data collection, transfer and the development of national standards – critical components necessary for the success of a GIS in South Africa	Cooper, AK
Apr-2005	Data content standards in Africa	Cooper, AK ; Govender, S ; Lance, K ; Tieszen, LL
Aug-2003	Description of spatial data infrastructures (SDIs) using the Unified Modelling Language (UML)	Cooper, AK ; Hjelmager, J ; Nielsen, A ; Rapant, P
	Detailed services in a spatial data infrastructure from the	Cooper, AK ; Moellering, H ; Hjelmager, J

Case Study: Dr Antony Cooper

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Albany AMT 10

A42:AMJ42 f(x) Σ = 0

	A	B	C	D	E	F	G	H	I	J	AO	AP	AQ	AR
1	Hits on papers in CSIR Research Space													
2	2011/01/24													
3	URL	Paper	Jan 2011	Dec 2010	Nov 2010	Oct 2010	Sep 2010	Aug 2010	Jul 2010	Jun 2010	Nov 2007	Oct 2007	TOTALS	
4	/1273/1/Schmitz_2007.pdf	Brussels	11	9	18	11	0	7	14	8	59	15	1124	
5	/1455/1/Cooper_2007.pdf	ICC 2007	0	0	0	0	0	0	0	0	17	0	269	
6	/1740/1/Cooper_2005.pdf	Comm Stats	0	0	0	0	0	0	0	2	0	0	9	
7	/1741/1/Coetzee1_2007.pdf	URISA 2007	2	0	0	0	0	0	0	0	0	0	240	
8	/1776/1/Cooper1_2003.pdf	ICC 2003	0	1	0	0	0	0	0	1	0	0	146	
9	/1780/1/Cooper1_2005.pdf	AfricaGIS 2005	0	5	6	22	6	9	3	8	0	0	340	
10	/1781/1/Cooper2_2005.pdf	ICC 2005	0	2	0	8	0	11	15	6	0	0	213	
11	/1782/1/Cooper3_2004.pdf	IU&V ISPRS	7	2	0	3	0	0	2	0	0	0	93	
12	/1871/1/Cooper_2005.pdf	CODI Content std	0	0	0	0	14	0	0	0	0	0	80	
13	/2233/1/Coetzee_2008.pdf	GSDI 10	0	10	17	9	13	2	0	8	0	0	449	
14	/2234/1/Cooper-1_2003.pdf	BPA	1	0	0	5	9	0	1	0	0	0	175	
15	/2259/1/Cooper_2008.pdf	Hum Log	0	0	0	0	0	0	0	0	0	0	18	
16	/2260/1/Cooper1_2008.pdf	Copenhagen	0	1	0	0	0	0	0	0	0	0	15	
17	/2262/1/Schmitz_2000.pdf	Case Studies	8	0	12	0	1	1	10	9	0	0	204	
18	/2385/1/Cannoo_2008.pdf	SACAM waves	0	9	5	0	0	8	15	14	0	0	552	
19	/2386/1/Cooper2_2008.pdf	SACAM PhysX	17	7	13	18	20	9	17	13	0	0	625	
20	/2556/1/Gledhill_2008.pdf	CSIR Conference	6	2	11	3	2	13	0	7	0	0	189	
21	/2671/1/Cooper_P_2006.pdf	CSIR Stds poster	0	0	0	0	0	0	0	0	0	0	0	
22	/2769/1/Cooper4_2008.pdf	Small munics	0	1	0	0	0	0	0	0	0	0	49	
23	/2776/1/Cooper_2002.pdf	Belo Horizonte	0	0	0	0	0	0	2	0	0	0	156	
24	/2778/1/Cooper1_2000.pdf	CMRC 2000 serial	10	15	11	19	14	22	32	16	0	0	548	
25	/2779/1/Cooper_2001.pdf	CMRC 2001 recon	12	0	8	3	14	10	7	10	0	0	304	
26	/2782/1/Schmitz_2002.pdf	CMRC 2002 Bredel	0	9	0	0	0	0	3	0	0	0	64	
27	/2783/1/Cooper5_2005.pdf	Content stds	0	0	1	3	9	7	12	15	0	0	303	
28	/2784/1/Cooper_1999.pdf	CMRC 1999 clocks	0	0	0	0	10	12	6	18	0	0	260	
29	/2785/1/Cooper3_2008.pdf	FOSS4G int'l	0	0	1	0	7	4	1	0	0	0	71	
30	/2788/1/Cooper_2000.pdf	CMRC 2000 cells	7	0	2	2	1	0	0	1	0	0	76	
31	/2791/1/Cooper_2006.pdf	IQPC 2006	0	10	0	0	0	9	1	12	0	0	111	
32	/2797/1/Cooper4_2005.pdf	(Metadata std)	0	0	0	0	0	0	0	0	0	0	17	
33	/2847/1/Cooper3_2005.pdf	African metadata	5	0	0	3	3	0	6	0	0	0	43	
34	/3042/3/Cooper_2008_d1.pdf	ISO Focus	0	0	0	0	0	0	0	0	0	0	99	
35	/3323/1/Cooper_2009.pdf	CODIST-1	0	19	11	9	11	6	1	13	0	0	449	
36	/3417/1/Cooper1_2009.pdf	ISI	10	0	9	0	0	0	0	0	0	0	87	
37	/3507/1/Schmitz_2009.pdf	Archiving workflow	0	0	0	0	0	1	0	0	0	0	44	
38	/3822/1/Cooper2_2009.pdf	ICC 2009	0	0	0	0	0	0	0	2	0	0	31	
39	/4132/1/Coetzee3_2007.pdf	SAJoS addresses	0	3	0	0	0	0	0	0	0	0	3	
40	/4267/4/Schoeman_2010.pdf	Breastmilk	0	0	19	21	36	0	0	0	0	0	76	
41	/4389/1/Cooper_2010.pdf	SATC 2010 Dynatr	0	0	8	4	0	0	0	0	0	0	12	
42	/4525/1/Cooper_2010.pdf	CLA 2010	0	6	0	0	0	0	0	0	0	0	6	

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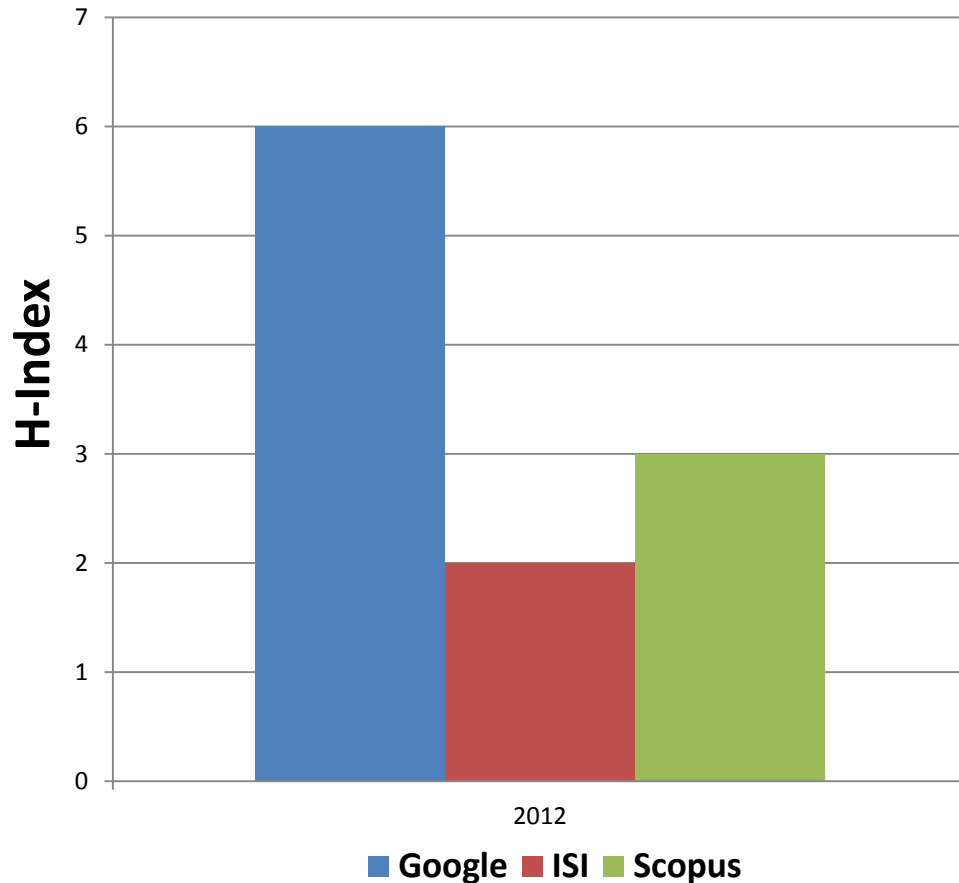
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Case Study: Dr Antony Cooper

- H-Index on Google Scholar, Scopus and Web of Science
- H-index combining all three of the above tools
- Papers contributing to his H-index were selected for the study

H-index



- H-index developed by Prof. J.E. Hirsch in 2005 to determine the scientific productivity of an author
- An H-index of 6 means that the author has published 6 papers that have been cited 6 times or more

H-index: Publications

No.	Papers	Year	Google Scholar	Scopus	ISI	Google Scholar only	Scopus only	ISI only	Citation rate
1	An initial formal model for spatial data Infrastructures. <i>Int. J. Geographical Information Science</i> , p.1295-1309	2008	19	5	19	19	2	0	21
2	Towards an international address standard, <i>Proceedings of GSDI 10 February 2008</i>	2008	20	0	0	20	0	0	20
3	The value of addresses to the economy, society and governance: a South African perspective, <i>Proceedings 45th Annual URISA Conference, 20-23 August 2007, Washington DC, USA</i>	2007	12	0	0	0	0	0	12
4	What is an address in South Africa?, <i>South African Journal of Science</i> , vol. 103(11), p.449-458	2007	12	3	2	12	0	0	12
5	Developing a modelling for the Spatial Data Infrastructure, <i>Proceedings of the 22nd International Cartographic Conference, A Coruña, Spain</i>	2005	9	0	0	9	0	0	9
6	Ethical issues in tracking cellular telephones at an event, <i>Special Issue of OMEGA on Ethics and Operational Research</i>	2009	6	2	2	6	0	0	6

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A42:AMJ42 f(x) Σ = 0

	A	B	C	D	E	F	G	H	I	J	AO	AP	AQ	AR
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4	/1273/1/Schmitz_2007.pdf	Brussels	11	9	18	11	0	7	14	8	59	15	1124	
5	/1455/1/Cooper_2007.pdf	ICC 2007	0	0	0	0	0	0	0	0	17	0	269	
6	/1740/1/Cooper_2005.pdf	Comm Stats	0	0	0	0	0	0	0	2	0	0	9	
7	/1741/1/Coetzee1_2007.pdf	URISA 2007	2	0	0	0	0	0	0	0	0	0	240	
8	/1776/1/Cooper1_2003.pdf	ICC 2003	0	1	0	0	0	0	0	1	0	0	146	
9	/1780/1/Cooper1_2005.pdf	AfricaGIS 2005	0	5	6	22	6	9	3	8	0	0	340	
10	/1781/1/Cooper2_2005.pdf	ICC 2005	0	2	0	8	0	11	15	6	0	0	213	
11	/1782/1/Cooper3_2004.pdf	IU&V ISPRS	7	2	0	3	0	0	2	0	0	0	93	
12	/1871/1/Cooper_2005.pdf	CODI Content std	0	0	0	0	0	14	0	0	0	0	80	
13	/2233/1/Coetzee_2008.pdf	GSDI 10	0	10	17	9	13	2	0	8	0	0	449	
14	/2234/1/Cooper-1_2003.pdf	BPA	1	0	0	5	9	0	1	0	0	0	175	
15	/2259/1/Cooper_2008.pdf	Hum Log	0	0	0	0	0	0	0	0	0	0	18	
16	/2260/1/Cooper1_2008.pdf	Copenhagen	0	1	0	0	0	0	0	0	0	0	15	
17	/2262/1/Schmitz_2000.pdf	Case Studies	8	0	12	0	1	1	10	9	0	0	204	
18	/2385/1/Cannoo_2008.pdf	SACAM waves	0	9	5	0	0	8	15	14	0	0	552	
19	/2386/1/Cooper2_2008.pdf	SACAM PhysX	17	7	13	18	20	9	17	13	0	0	625	
20	/2556/1/Gledhill_2008.pdf	CSIR Conference	6	2	11	3	2	13	0	7	0	0	189	
21	/2671/1/Cooper_P_2006.pdf	CSIR Stds poster	0	0	0	0	0	0	0	0	0	0	0	
22	/2769/1/Cooper4_2008.pdf	Small munics	0	1	0	0	0	0	0	0	0	0	49	
23	/2776/1/Cooper_2002.pdf	Belo Horizonte	0	0	0	0	0	0	2	0	0	0	156	
24	/2778/1/Cooper1_2000.pdf	CMRC 2000 serial	10	15	11	19	14	22	32	16	0	0	548	
25	/2779/1/Cooper_2001.pdf	CMRC 2001 recon	12	0	8	3	14	10	7	10	0	0	304	
26	/2782/1/Schmitz_2002.pdf	CMRC 2002 Bredel	0	9	0	0	0	0	3	0	0	0	64	
27	/2783/1/Cooper5_2005.pdf	Content stds	0	0	1	3	9	7	12	15	0	0	203	
28	/2784/1/Cooper_1999.pdf	CMRC 1999 clocks	0	0	0	0	10	12	6	18	0	0	360	
29	/2785/1/Cooper3_2008.pdf	FOSS4G int'l	0	0	1	0	7	4	1	0	0	0	71	
30	/2788/1/Cooper_2000.pdf	CMRC 2000 cells	7	0	2	2	1	0	1	0	0	0	76	
31	/2791/1/Cooper_2006.pdf	IQPC 2006	0	10	0	0	0	9	1	12	0	0	111	
32	/2797/1/Cooper4_2005.pdf	(Metadata std)	0	0	0	0	0	0	0	0	0	0	17	
33	/2847/1/Cooper3_2005.pdf	African metadata	5	0	0	3	3	0	6	0	0	0	43	
34	/3042/3/Cooper_2008_d1.pdf	ISO Focus	0	0	0	0	0	0	0	0	0	0	99	
35	/3323/1/Cooper_2009.pdf	CODIST-1	0	19	11	9	11	6	1	13	0	0	449	
36	/3417/1/Cooper1_2009.pdf	ISI	10	0	9	0	0	0	0	0	0	0	87	
37	/3507/1/Schmitz_2009.pdf	Archiving workflow	0	0	0	0	0	1	0	0	0	0	44	
38	/3822/1/Cooper2_2009.pdf	ICC 2009	0	0	0	0	0	0	0	2	0	0	31	
39	/4132/1/Coetzee3_2007.pdf	SAJoS addresses	0	3	0	0	0	0	0	0	0	0	3	
40	/4267/4/Schoeman_2010.pdf	Breastmilk	0	0	19	21	36	0	0	0	0	0	76	
41	/4389/1/Cooper_2010.pdf	SATC 2010 Dynatr	0	0	8	4	0	0	0	0	0	0	12	
42	/4525/1/Cooper_2010.pdf	CLA 2010	0	6	0	0	0	0	0	0	0	0	6	

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Downloads vs. citations from Google Scholar

No.	Papers	Year	Citation rate	Downloads ResearchSpace	Google Scholar citations	Direct citations Research Space
1	An initial formal model for spatial data Infrastructures. <i>Int. J. Geographical Information Science</i> , p.1295-1309	2008	21	269	19	0
2	Towards an international address standard, <i>Proceedings of GSDI 10 February 2008</i>	2008	20	449	20	1
3	The value of addresses to the economy, society and governance: a South African perspective, <i>Proceedings 45th Annual URISA Conference, 20-23 August 2007, Washington DC, USA</i>	2007	12	240	12	0
4	What is an address in South Africa?, <i>South African Journal of Science</i> , vol. 103(11), p.449-458	2007	12	3	12	0
5	Developing a modelling for the Spatial Data Infrastructure, <i>Proceedings of the 22nd International Cartographic Conference, A Coruña, Spain</i>	2005	9	213	9	
6	Ethical issues in tracking cellular telephones at an event, <i>Special Issue of OMEGA on Ethics and Operational Research</i>	2009	6	0	6	0

Results

Paper	Downloads	Citations	Ratio
1	269	19	1 citation for every 14 downloads
2	449	20	1 citation for every 20.5 downloads
3	240	12	1 citation for every 20 downloads
4	3	12	1 citation for every 0.25 downloads
5	213	9	1 citation for every 23.6 downloads
6	0	6	No downloads

Results

No.	Papers	Year	Citation rate	Downloads ResearchSpace	Google Scholar citations	Direct citations Research Space
1	An initial formal model for spatial data Infrastructures. <i>Int. J. Geographical Information Science</i> , p.1295-1309	2008	21	269	19	0
2	Towards an international address standard, <i>Proceedings of GSDI 10 February 2008</i>	2008	20	449	20	1
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4	What is an address in South Africa?, <i>South African Journal of Science</i> , vol. 103(11), p.449-458	2007	12	3	12	0
5	Developing a modelling for the Spatial Data Infrastructure, <i>Proceedings of the 22nd International Cartographic Conference, A Coruña, Spain</i>	2005	9	213	9	0
6	Ethical issues in tracking cellular telephones at an event, <i>Special Issue of OMEGA on Ethics and Operational Research</i>	2009	6	0	6	0

Results

Direct link between a ResearchSpace download and a citation

No.	Cited paper	Citing paper	Direct citation from Research Space
2	Cooper, A.K. 2008. <i>Towards an international address standard</i> , Proceedings of GSDI, 10 February 2008	Coetzee S et al. 2009. <i>Geoinformation perspectives on innovation and economic growth</i> . 1st Session of the Committee on Development Information, Science and Technology (CODIST-1), Addis Ababa, Ethiopia, April 28 - May 1, 2009	Cooper A.K. 28 February 2008. <i>Towards an international address standard</i> , GSDI 10, St Augustine, Trinidad, 30pp. Accessed 8 March 2009 at: http://researchspace.csir.co.za/dspace/handle/10204/2233

Conclusion

In conclusion:

- We could not prove a direct link between institutional repository downloads and citation count.
- We speculate this is because:
Our sample is too small, the study should be expanded to include the download statistics for a larger number of researchers.
- We should also investigate additional analytical tools and metrics.

Conclusion

- In a further study we would also like to look at the results from a qualitative perspective and focus on the nature of the publications:
 - 1) It could be that the content and the level of the work might be suitable at student level. Students might download the work but they do not necessarily publish (and cite) Which means their citations won't be picked up by citation counting tools. This could explain the high number of downloads coupled to a relative low citation count.
 - 2) Alternatively it could point to the field of study. It is well known that average citation rates varies across subject fields
 - 3) It could of course also be simply an indication of the quality of the researchers work.

Thank you!

Any Questions?