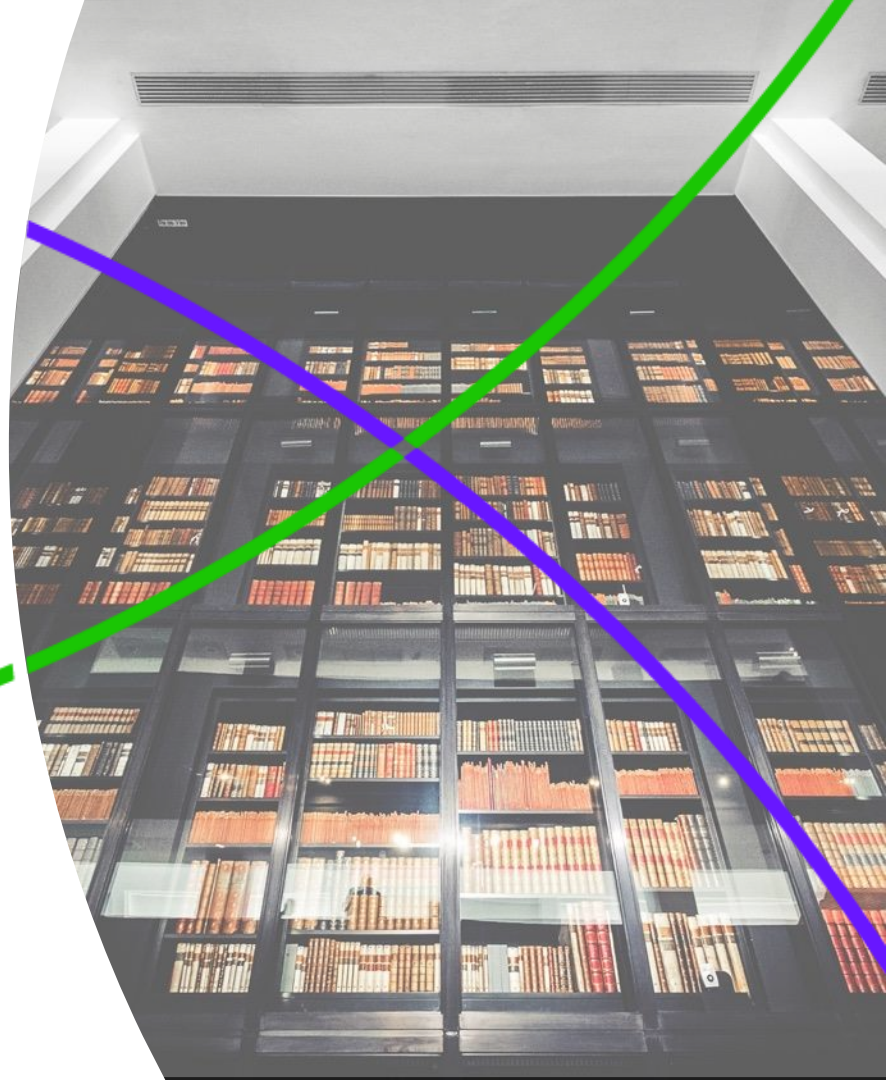
Bibliometrics & Research Management

HESPA – Practical Session 2

February 2017



Clarivate Analytics

What can I answer using bibliometrics?

- Attract highly respected scholars
- Increase visibility and reputation
- Obtain funding in a ever more competitive landscape

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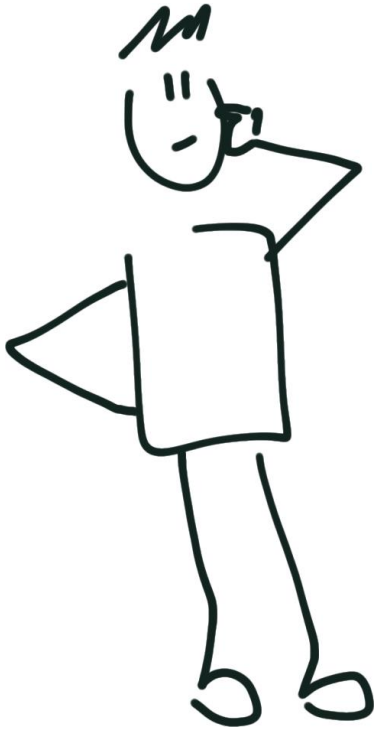
What are the biggest concerns of a strategic planner?

Selecting highly respected scholars



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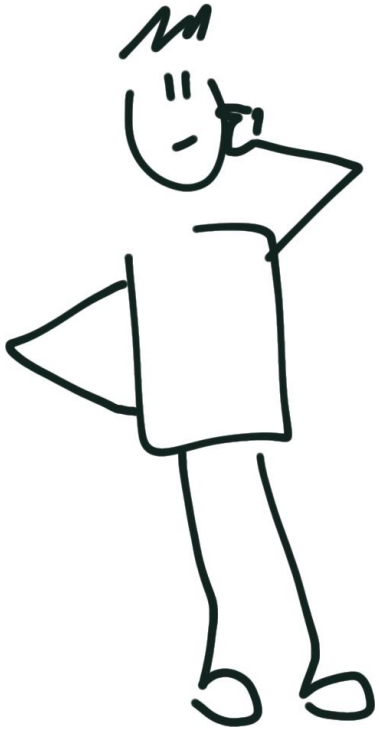
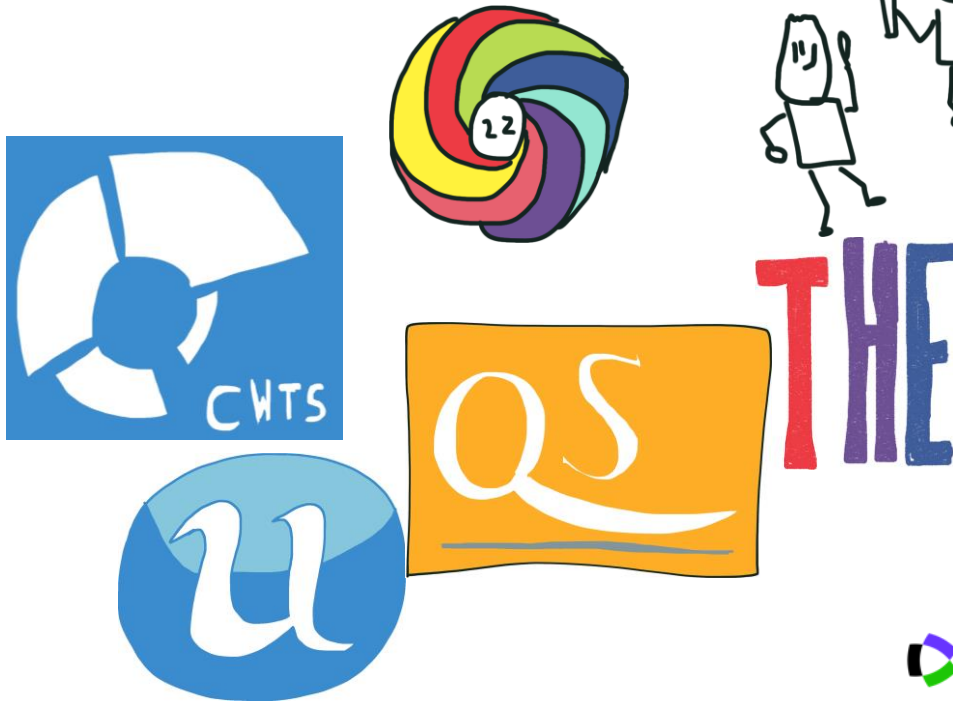
What are the biggest concerns of a strategic planner?

Increase visibility and reputation





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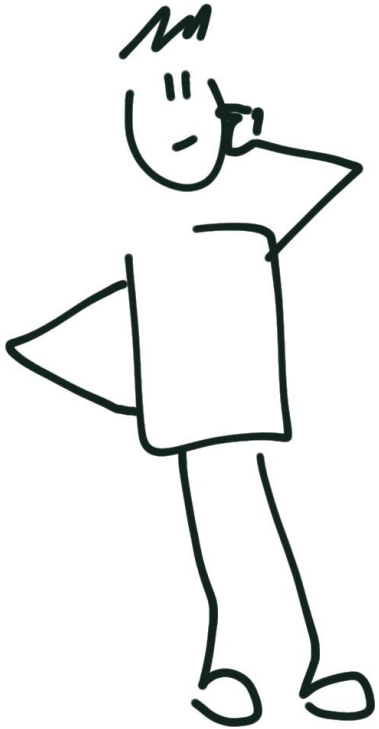
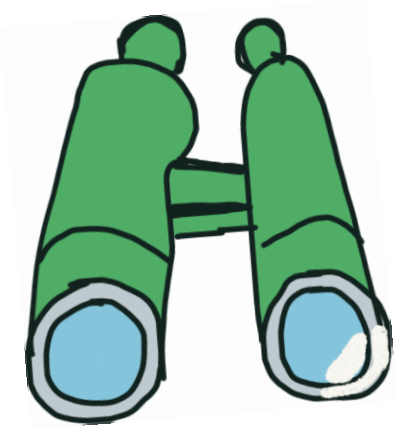
What are the biggest concerns of a strategic planner?



Obtain funding



What if you could see further?

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Why are bibliometric methods and citation analysis gaining popularity?

+ Availability of bibliometric data e.g. online bibliometric databases
+ Objective, easy and low cost procedure
+ Positive correlation with peer review

Limitations

- No qualitative differentiation between citations
- Technical errors e.g., typographical errors in papers and references (not captured well, result in inaccuracy)
- Citations measure scientific *impact/ utility/ merit*, not quality
- Citations vary across different subject fields and time
- Citation coverage depends on their sources

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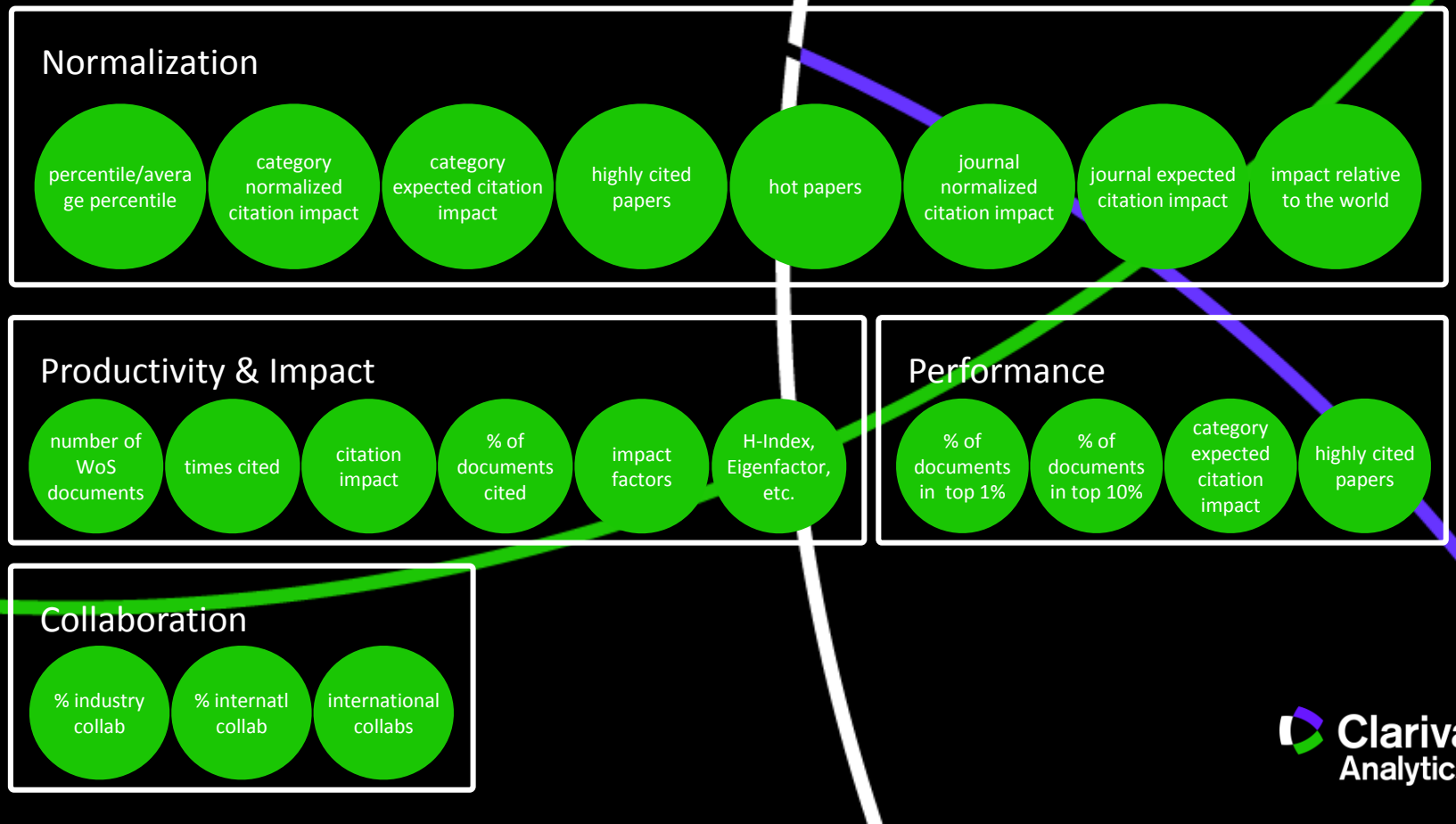
What indicators can we provide?



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Some of these indicators are

Number of Citations	Citation Impact	H-Index
Most widely used metric.	Average number of citations on a set of papers	Calculated using the number of publications and citations per publication of an author

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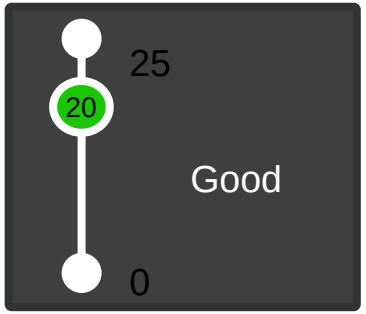
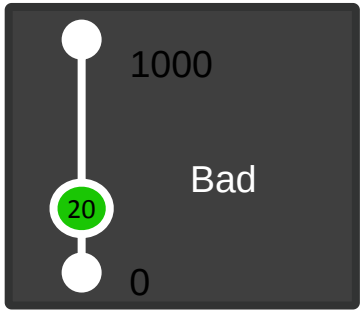
Normalization in practice

IS 20 good or bad?





CONTEXT IS EVERYTHING

INDICTORS MUST BE PUT INTO CONTEXT TO BE USEFUL: CATEGORY, JOURNAL, PEERS, GLOBAL

- NORMALIZED INDICATORS — for relative performance comparisons
- PERCENTILES — where does it fall in the range of values?
- BENCHMARKS — how does it compare with a group or globally?

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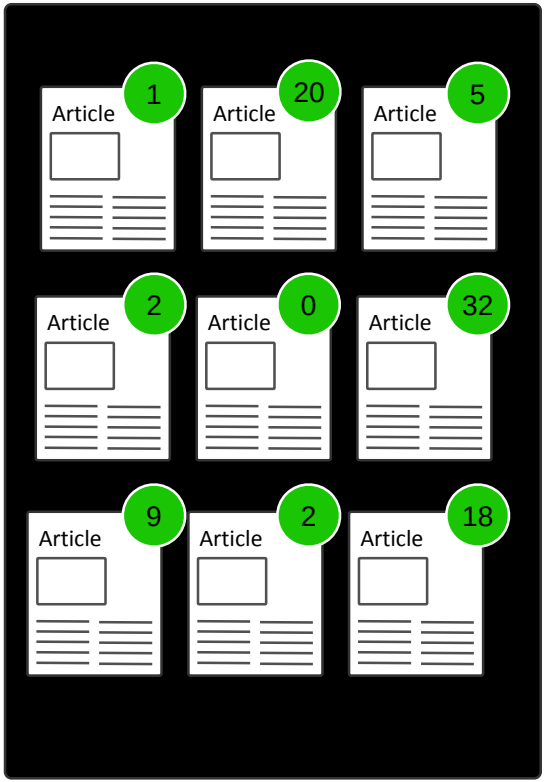
Normalization in practice



EXPECTED NUMBER OF CITATIONS FOR ARTICLE SET*

AVERAGE CALCULATED FROM SUM OF ALL DOCUMENTS IN THE SELECTED GROUP

89 Total Cites in group

89 Total

9 Documents in group

= 9.9 Expected cites

NORMALIZED

RATIO OF ACTUAL/EXPECTED CITATIONS

Article 12

12 Total

9.9 Expected

= 1.14 Normalized

also ORGANIZATIONS, COUNTRIES, RESEARCH AREAS, PEOPLE

*for journal/category, publication year, and document type

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What can I answer using bibliometrics?

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Who are the most impactful researchers?

Established researchers

Name	Rank	Web of Science Documents	Category Normalized Citation Impact	Times Cited	% Docs Cited	H-Index	Highly Cited Papers	% Hot Papers	Citation Impact
Nosten, Francois	1	195	3.25	8,189	97.95%	46	12	0%	41.99
White, Nicholas	2	173	3.2	8,724	92.49%	48	8	0%	50.43
D'Alessandro, Umberto	3	167	1.46	2,904	79.04%	28	2	0%	17.39
Sauerwein, Robert	4	163	2.4	5,036	93.87%	41	4	0%	30.9
Price, Richard	5	144	2.31	4,755	89.58%	38	6	0%	33.02
Mueller, Ivo	6	130	1.79	3,314	84.62%	30	3	0%	25.49
Bousema, Teun	7	122	3	3,139	86.89%	29	5	0%	25.73
Snow, Robert	8	109	3.08	4,847	98.17%	38	9	0%	44.47
Smith, Thomas	9	107	1.73	1,578	83.18%	21	3	0.93%	14.75
Hay, Simon	10	104	8.9	6,130	94.23%	42	18	2.88%	58.94

Topic: Malaria

Clarivate Analytics

Who are the most impactful researchers?

Rising Stars

Name	Rank	Web of Science Documents	Category Normalized Citation Impact	▼ Times Cited	% Docs Cited	H-Index	Highly Cited Papers	% Hot Papers	Citation Impact
Hotez, Peter	1	35	28.4	6,403	100%	19	7	2.86%	182.94
Black, Robert	2	17	11.9	2,510	94.12%	13	3	0%	147.65
Dimopoulos, George	3	35	3.24	2,349	100%	21	4	0%	67.11
Newbold, Chris	4	30	3.35	1,829	100%	21	1	0%	60.97
Renia, Laurent	5	32	2.61	1,824	96.88%	21	2	0%	57
Winzeler, Elizabeth	6	34	2.62	1,535	97.06%	22	2	0%	45.15
Ralph, Stuart	7	29	2.46	1,493	100%	18	2	0%	51.48
Baum, Jake	8	33	2.23	1,375	96.97%	19	1	0%	41.67
Scherf, Artur	9	34	1.63	1,323	100%	19	0	0%	38.91
Miotto, Olivo	10	16	14.01	1,322	93.75%	11	6	0%	82.63

Topic: Malaria

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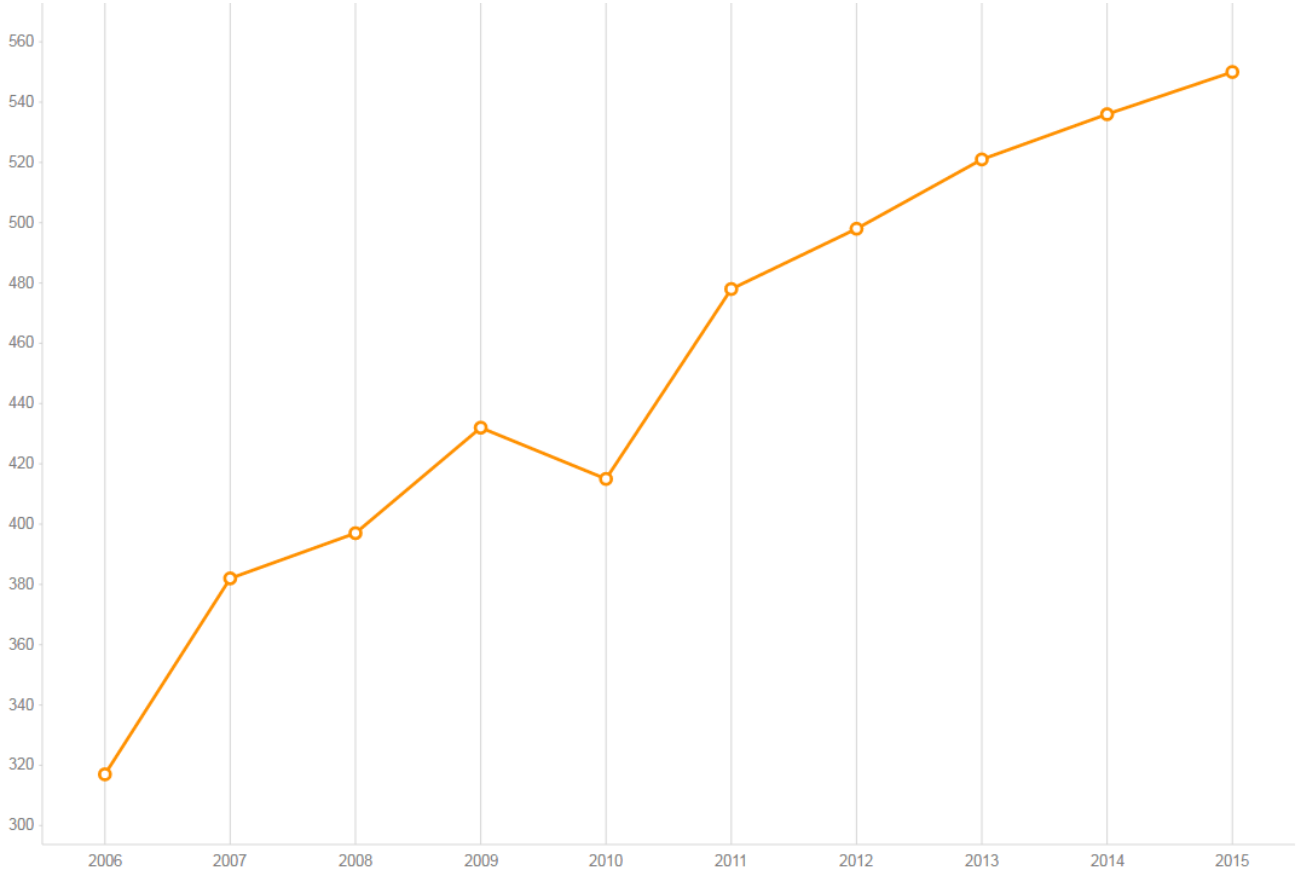
Increase visibility and reputation



Productivity of the University of Central Lancashire
Source: InCites
Period: 2006-2015

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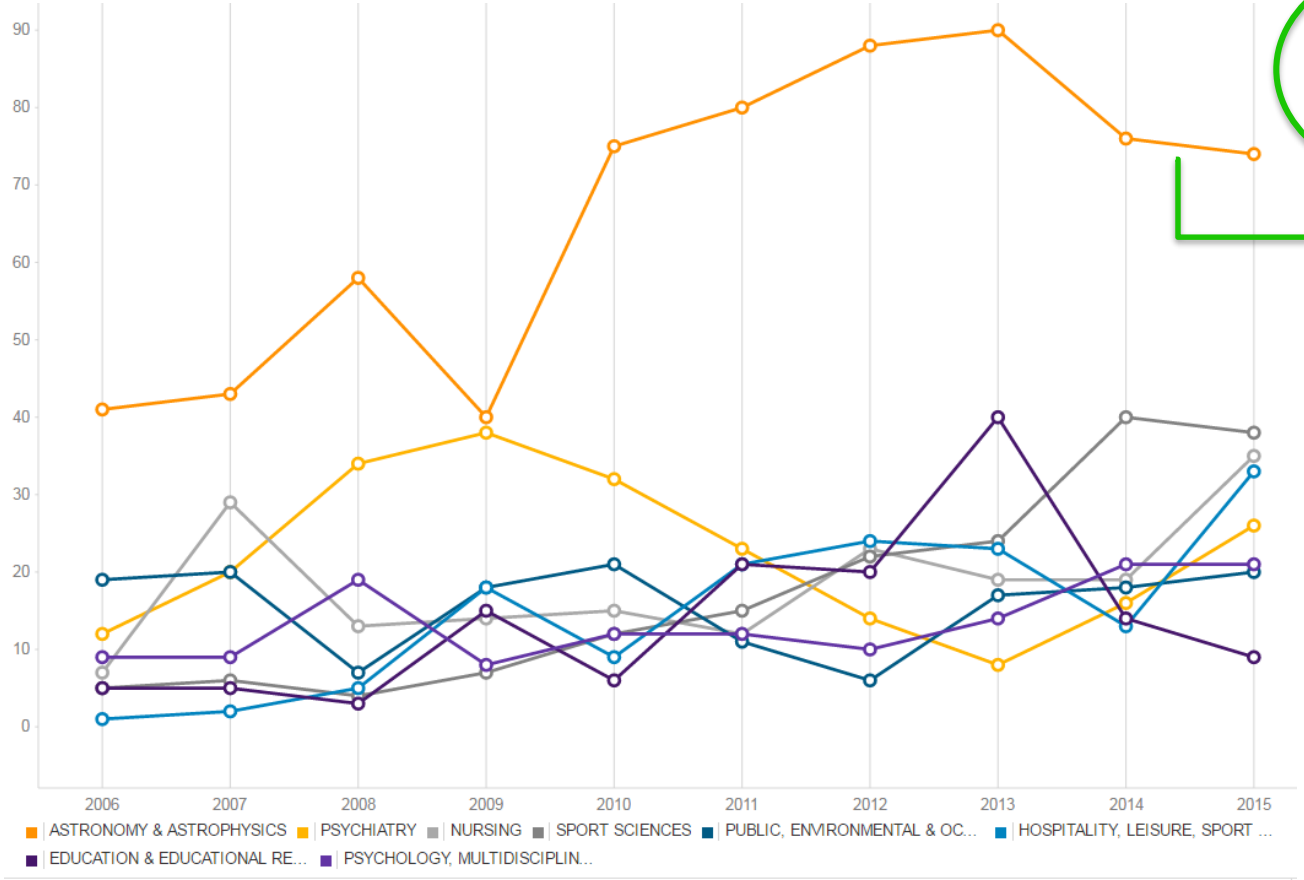
Increase visibility and reputation



CNCI

1.53

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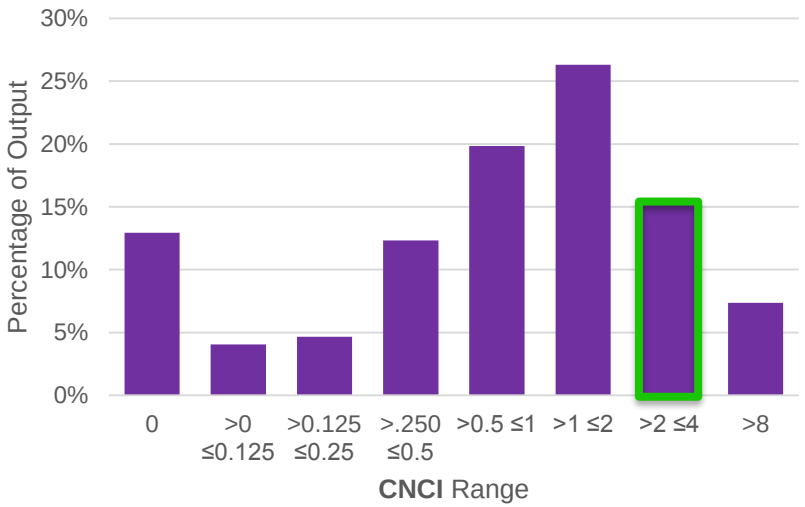
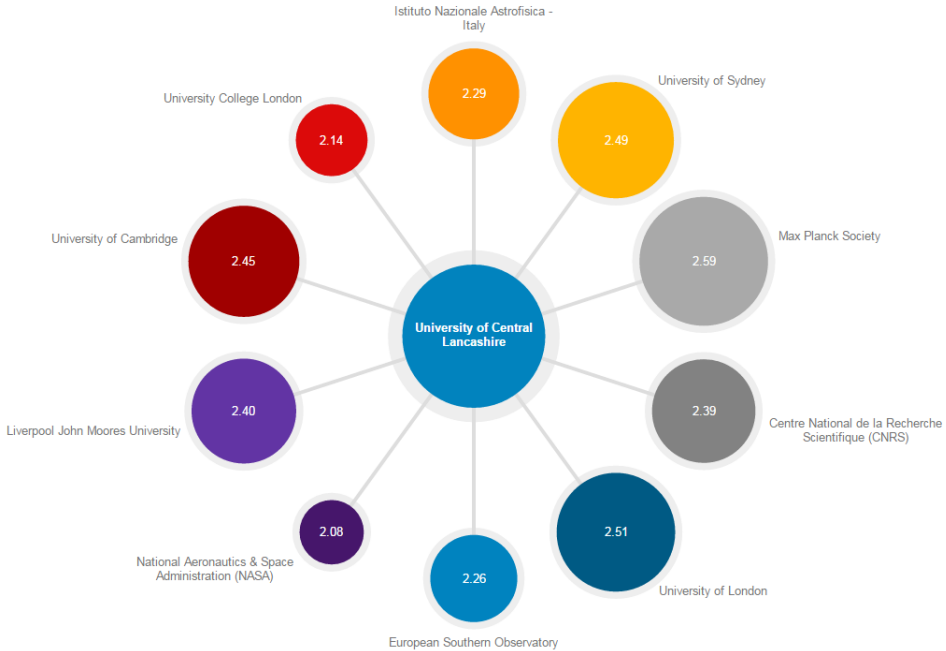
Increase visibility and reputation





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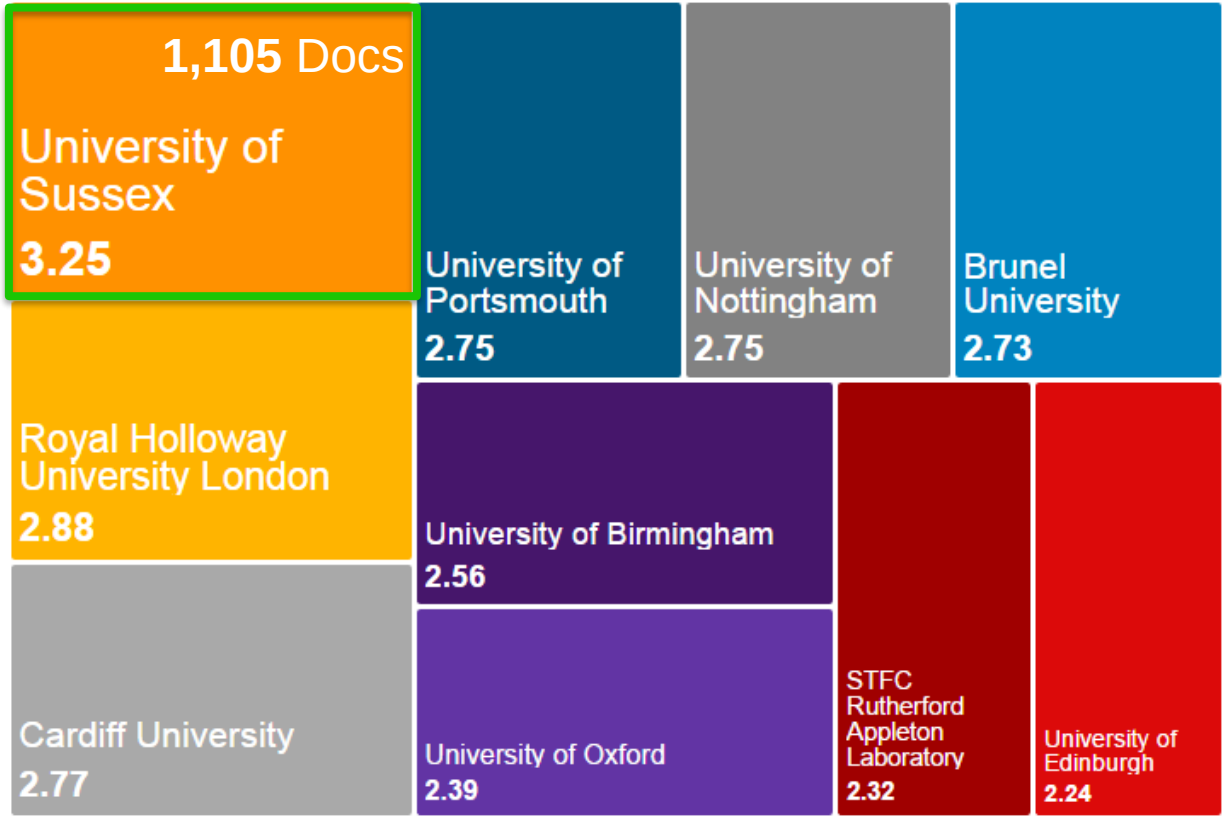
Increase visibility and reputation



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Increase visibility and reputation

Which journals make you more visible?

Which papers from your institution are part of research fronts?

Is publishing in Open Access being of value for you? Can you optimise it?

What is the impact of international collaborations in this area?

Who is publishing the trends in this research area?

International Collaborations

Number of Citations

Industry Collaborations

Hot Papers

% Top 1%

Highly Cited Papers

Category Normalized Citation Impact

% Top 10%

Journal Normalized Citation Impact

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Analysing funding agencies

Contribution of main funders in percentage of Publications in Scotland

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Analysing funding agencies

9,054 Publications in the ESI research area of Chemistry from Scotland

29% Percentage of total which is funded by EPRC (2,600)

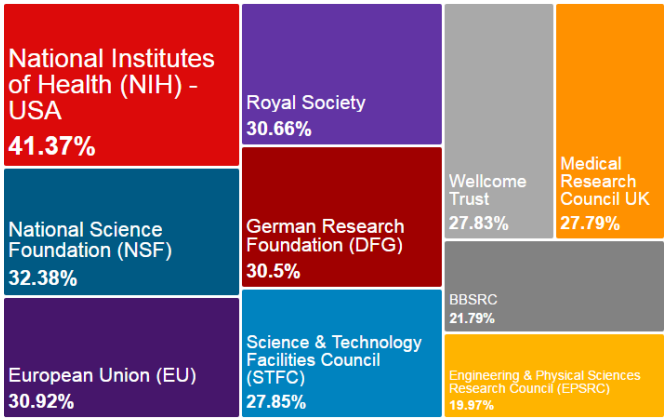
1.56 CNCI of publications funded by EPRC vs 1.27 overall

Analysing funding agencies

Contribution of main funders in percentage of Publications in **University of Edinburgh**

	CNCI
EPRC	2.51
MRC UK	1.69

474 Funding Agencies



Percentage of documents in top 10% from top 10 funders

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Can I trust your data?

Statistics are as valid as the data behind them

At the heart of our solutions: THE WEB OF SCIENCE CORE COLLECTION

Not just a database: A network of more than 64M publications, interlinked by citations based on more than a Billion cited references

The philosophy: To offer content of the highest quality

Journals, Conference and books are strictly selected using a set of quality criteria established and developed for over 50 years

Journals are indexed cover-to-cover

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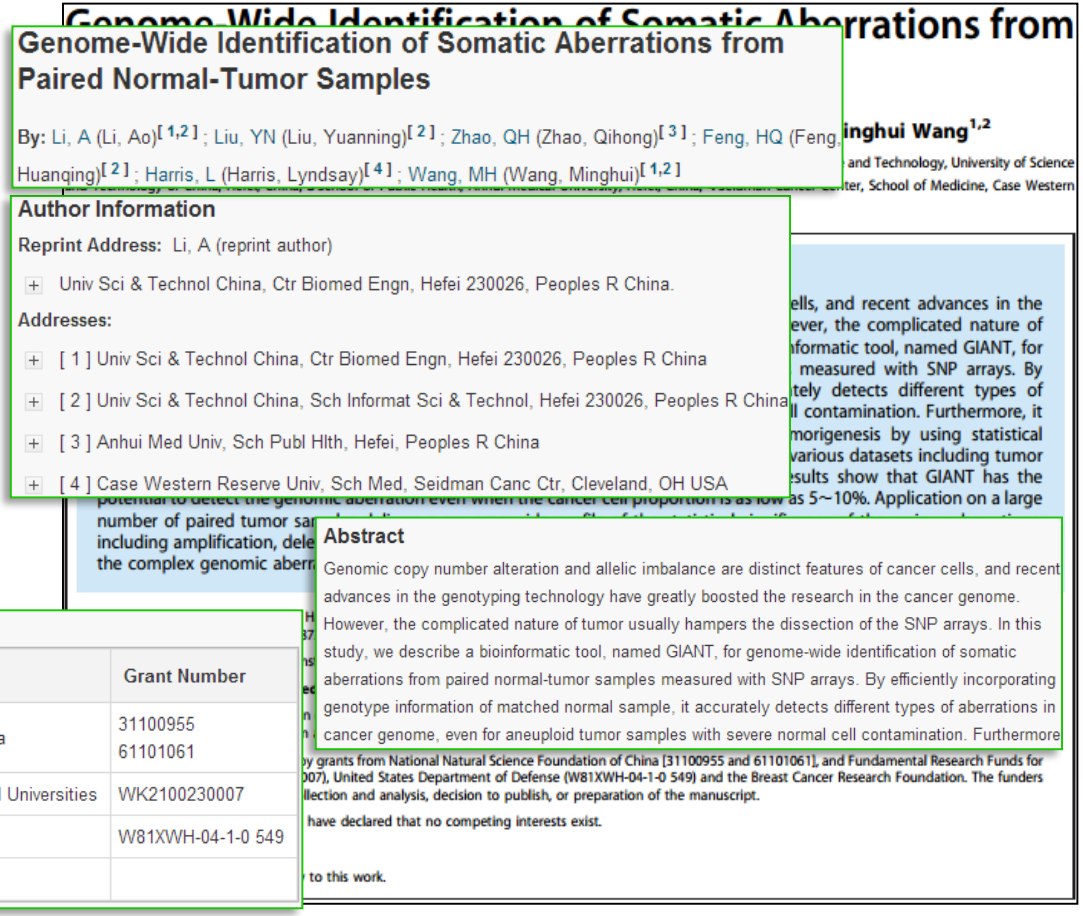
At the heart of our solutions: THE WEB OF SCIENCE CORE COLLECTION

All authors and bibliographic information

All affiliations and addresses

All funding sources (2008) manually captured

>1 Billion cited references



Genome-Wide Identification of Somatic Aberrations from Paired Normal-Tumor Samples

By: Li, A (Li, Ao)[1,2]; Liu, YN (Liu, Yuanning)[2]; Zhao, QH (Zhao, Qihong)[3]; Feng, HQ (Feng, Huanqing)[2]; Harris, L (Harris, Lyndsay)[4]; Wang, MH (Wang, Minghui)[1,2]

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Abstract

Genomic copy number alteration and allelic imbalance are distinct features of cancer cells, and recent advances in the genotyping technology have greatly boosted the research in the cancer genome. However, the complicated nature of tumor usually hampers the dissection of the SNP arrays. In this study, we describe a bioinformatic tool, named GIANT, for genome-wide identification of somatic aberrations from paired normal-tumor samples measured with SNP arrays. By efficiently incorporating genotype information of matched normal sample, it accurately detects different types of aberrations in cancer genome, even for aneuploid tumor samples with severe normal cell contamination. Furthermore

Funding

Funding Agency	Grant Number
National Natural Science Foundation of China	31100955 61101061
Fundamental Research Funds for the Central Universities	WK2100230007
United States Department of Defense	W81XWH-04-1-0 549
Breast Cancer Research Foundation	

Citation Network

34 Times Cited

36 Cited References

View Related Records

View Citation Map

Create Citation Alert

(data from Web of Science ™ Core Collection)

All Times Cited Counts

36 in All Databases

34 in Web of Science Core Collection

30 in BIOSIS Citation Index

4 in Chinese Science Citation Database

0 in Data Citation Index

0 in SciELO Citation Index

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Continuous disambiguation effort

SOURCE

Add	EDINA NATL DATA CTR
Add	EDINBURG DENT INST
Add	EDINBURGH ARTERY STUDY
Add	EDINBURGH BIOMOL NMR UNIT
Add	EDINBURGH BREAKTHROUGH RES UNIT
Add	EDINBURGH BREAST RES GRP
Add	EDINBURGH BREAST UNIT
Add	EDINBURGH BUSH ESTATE

Funding

Funding Agency
Engineering and Physical Sciences Research Council (EPSRC)

Funding Agency
Natural Environment Research Council
Engineering and Physical Sciences Research Council

Funding Agency
EPSRC

ANALYSIS

Name	Rank	Web of Science Documents	Category Normalized Citation Impact	▼ Times Cited	% Docs Cited
University of Edinburgh	1	129,577	1.57	3,036,293	69.65%
University of Glasgow	2	104,755	1.37	2,034,979	67.57%
University of Aberdeen	3	56,290	1.33	1,102,423	70.35%
University of Dundee	4	40,465	1.42	1,051,402	71.44%
University of St Andrews	5	35,176	1.34	673,401	67.78%
University of Strathclyde	6	35,849	1.13	494,404	69.87%

Name	Rank	▼ Web of Science Documents	Times Cited	% Docs Cited	Category Normalized Citation Impact
Engineering & Physical Sciences Research Council (EPSRC)	1	8,738	139,979	86.5%	1.48
Wellcome Trust	2	6,058	174,250	91.65%	2.41
Medical Research Council UK	3	5,901	171,527	90.68%	2.35
BBSRC	4	5,126	112,959	90.6%	1.76
European Union (EU)	5	4,966	135,530	90.74%	2.37

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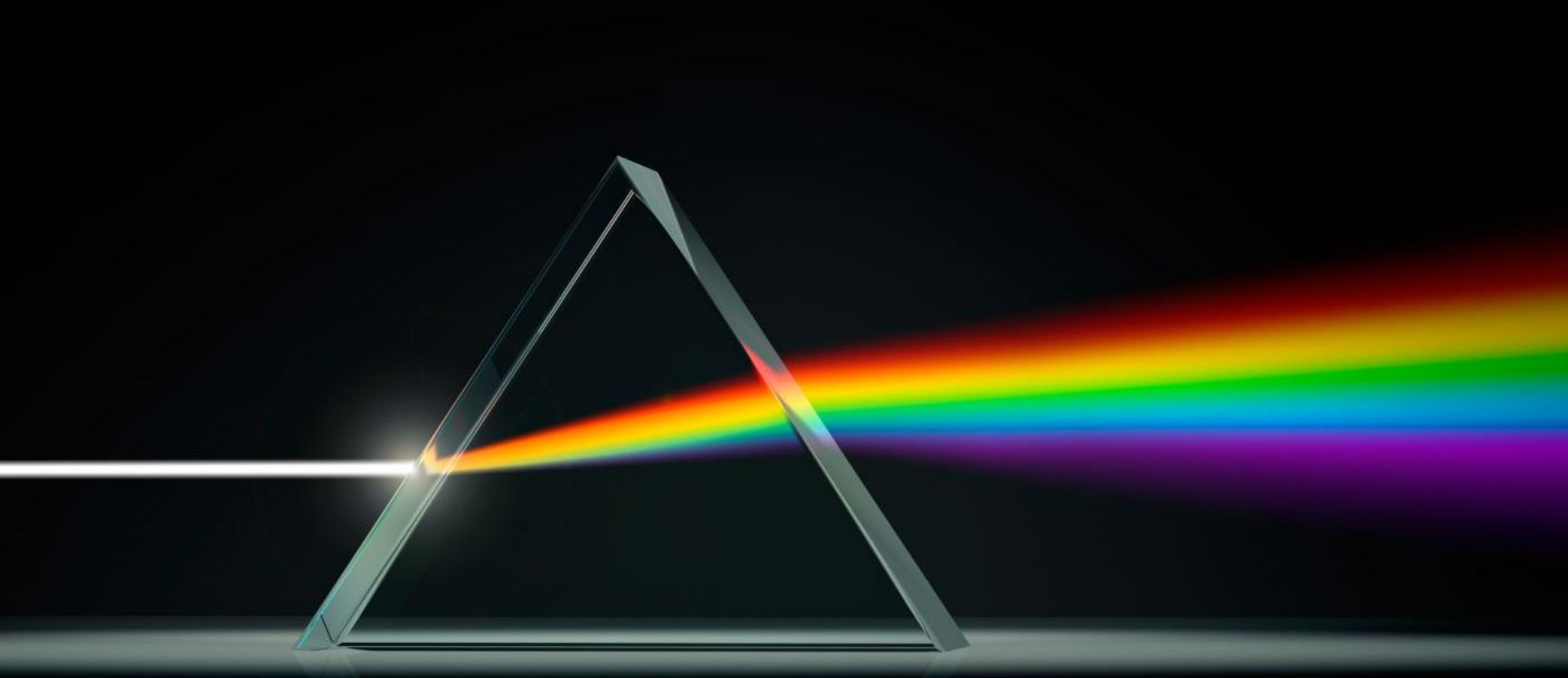

Data can be analyzed through **different angles**.

Publishing more isn't always a synonym of **more impact.**

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