



Understanding the impact of research on policy using Altmetric data

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Introduction

Usage, sharing, and discussion data sourced from the scholarly and social web (altmetrics) are being increasingly recognized as tools for understanding the diverse impacts that research can have on the world.

We have developed a text-mining solution, the Altmetric Policy Miner (APM), to discover mentions of research outputs in policy documents from diverse groups such as the International Monetary Fund, World Health Organization, and Intergovernmental Panel on Climate Change. By automatically identifying references to scholarly content in policy documents, we aim to help researchers and institutions to better understand the “real world” usage and application of their work.

Here, we explain our current process for sourcing, scraping, validating, and surfacing policy mentions of research outputs. We also include case studies that illustrate how policy data mined by Altmetric are presently being used.

Use case #1: World Bank Group

Jose De Buerba, Senior Publishing Officer

The World Bank conducts and publishes research on a broad range of global issues, including development policy, finance, health, education, climate change, aid effectiveness, and poverty. Outputs are published in the form of books, reports, working papers, policy papers, and journal articles.

The World Bank has a strong interest in understanding how its knowledge is used by policymakers and analysts worldwide. Citations in policy documents from other institutions – international, national, or regional – can be good proxies for influence and can prove relevant to assessing the impact of a particular policy paper.

“To go beyond academic citations or mentions in social media and now be able to track citations in policy documents is very interesting. It can potentially enable us to discover if, when and where we are having an influence on policymaking.”

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Policy mining procedure

- 1 Altmetric selects a specific policy organization's website to be mined.
- 2 Altmetric developer creates a crawler to download policy documents from a specific organization's website.
- 3 Altmetric Policy Miner (APM) automatically extracts plain text from the PDF or HTML policy documents.
- 4 APM searches document text for DOIs, English article titles, journal names, authors, and other parameters.
- 5 APM uses the parameters to search for a matching scholarly article in CrossRef and PubMed databases.
- 6 If an exact match is found, a link to the policy document is added to the article's corresponding Altmetric details page.
- 7 An Altmetric score of 3 is awarded to the article for each policy source that mentions the article. (see Fig. 1)



Curation / manual task



Automated task

Use case #2: Cochrane UK

Anne Eisinga, Information Specialist

Cochrane produces systematic reviews that summarise the best available clinical evidence for health topics and conditions.

At Cochrane's UK centre, Anne and colleagues identify where Cochrane evidence has been used in clinical guidelines (e.g., those produced by NICE and SIGN) and other policy documents. Charting the impact of evidence on clinical practice and healthcare policy is of particular interest to Cochrane UK and their funder, the National Institute for Health Research (NIHR).

Cochrane UK has recently benefited from adding altmetrics to the range of resources they use to identify key policy mentions. These are assessed manually to determine whether a Cochrane review has been used directly as evidence for a clinical recommendation or has primarily served as background to set recommendations in context.

“To improve our efficiency in tracking mentions of Cochrane evidence in a wide range of policy documents, it is immensely helpful for our understanding of where Cochrane evidence is contributing to preventing harm or improving health and wellbeing.”

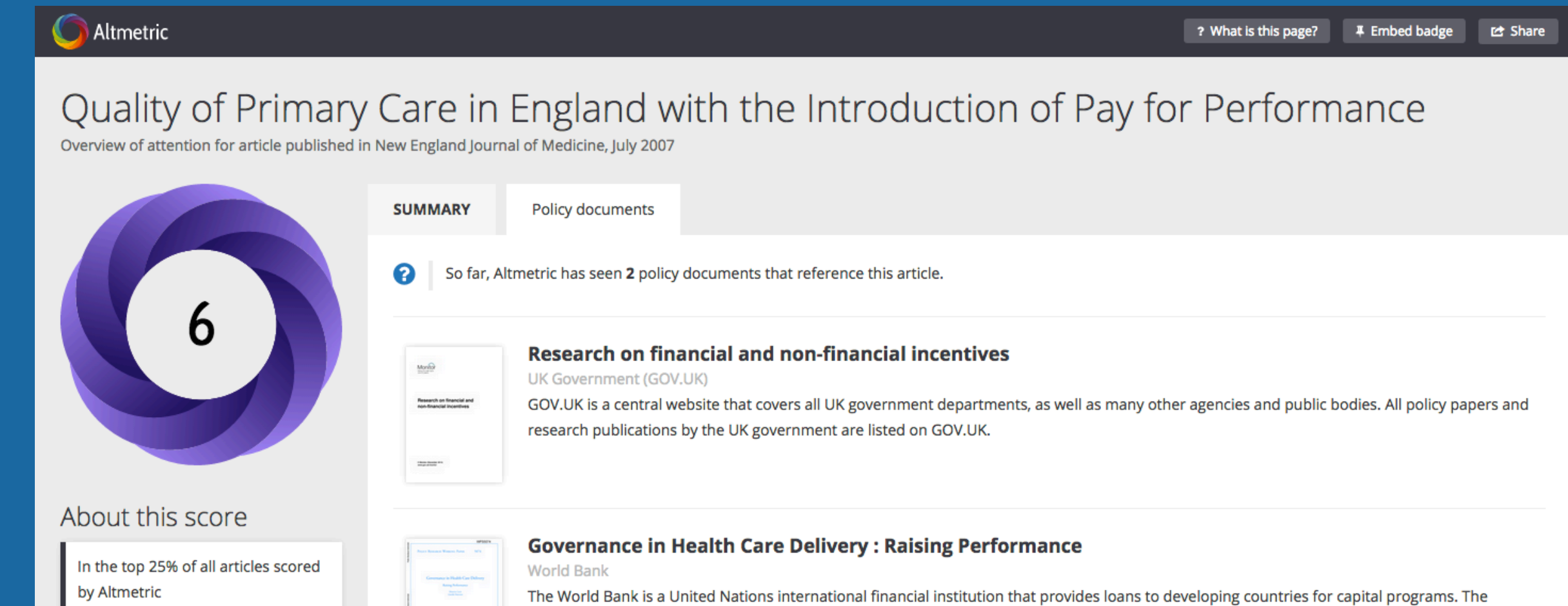


Figure 1. The Altmetric details page for a NEJM article that has been cited by 2 public policy sources, GOV.UK and the World Bank. Each policy document that mentions the article is linked from the page, allowing users to see the context of the citations.

Policy Sources

Policy sources are manually curated by Altmetric, and are not necessarily in English. Altmetric users and customers often suggest additional sources to track. The sources currently include, but are not limited to:

- European Food Safety Authority (EFSA)
- GOV.UK - Policy papers, Research & Analysis
- Intergovernmental Panel on Climate Change (IPCC)
- International Committee of the Red Cross (ICRC)
- World Health Organization (WHO)
- International Monetary Fund (IMF)
- Médecins sans Frontières (MSF)
- NICE Evidence
- Oxfam Policy & Practice
- UNESCO
- World Bank

Future work

One limitation of the current Altmetric policy tracking is that our sources are mostly limited to major organizations from North America and Europe. As we continue to curate and add sources, we aim to track more diverse policy organizations, particularly those from regions such as Asia and Africa.

We also aim to improve the article matching precision of APM by refining our text-mining engine, which is also used to text-mine mainstream news content in Altmetric. Additionally, we will continue to work with funders, publishers, institutions, and researchers to identify more ways to surface the impact of research on policy.

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