Quantifying Engagement with Citations on Wikipedia

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Citing the source

“Citations have several important purposes: [...] to allow the reader to determine independently whether the referenced material supports the author's argument in the claimed way, and to help the reader gauge the strength and validity of the material the author has used.”
Wikipedia's verifiability policy requires inline citations for any material challenged or likely to be challenged, and for all quotations, anywhere in article space [1].

The Web Conference (formerly known as International World Wide Web Conference, abbreviated as WWW) is a yearly international academic conference on the topic of the future direction of the World Wide Web. The first conference of many was held and organized by Robert Cailliau in 1994 at CERN in Geneva, Switzerland. The conference has been organized by the International World Wide Web Conference Committee (IW3C2), also founded by Robert Cailliau and colleague Joseph Hardin, ever since.[1] The conference's location rotates among North America, Europe, and Asia and its events usually span a period of five days. The conference aims to present a forum in which "key influencers, decision makers, technologists, businesses and standards bodies" can both present their ongoing work, research, and opinions as well as receive feedback from some of the most knowledgeable people in the field.[1]

The conference series is aimed at providing a global forum for discussion and debate in regard to the standardization of its associated technologies and the impact of said technologies on society and culture. Developers, researchers, internet users as well as commercial ventures and organizations come together at the conference to discuss the latest advancements of the Web and its evolving uses and trends, such as the development and popularization of the eTV and eBusiness.[2] The conferences usually include a variety of events, such as tutorials and workshops, as well as the main conference and special dedications of space in memory of the history of the Web and specific notable events.[3] The conferences are organized by the IW3C2 in collaboration with the World Wide Web Consortium (W3C), Local Organizing Committees, and Technical Program Committees.[4]

References [ edit source ]

1. ^ a b "Past and Future Conferences".  
Understanding readers’ interactions with references is crucial:

● to understand the role of editors and policies in maintaining high quality information

● to study what can increase interest in the reference content

● to design visualizations and tools to support content referencing
RQ1: To what extent do users engage with citations when reading Wikipedia?

RQ2: What features of a page predict whether a reader will interact with a citation on the page?

RQ3: What features of a citation predict whether a reader will interact with it?
Wikipedia

From Wikipedia, the free encyclopedia

Wikipedia (/ˈwɪkiːpiːdiə/ (listen) wik-EE-pee-dee-ə) is a multilingual online encyclopedia created and maintained as an open collaboration project[3] using a wiki-based editing system,[4] it is the largest and most popular general reference source[5] and is one of the most popular websites ranking in the top ten.[6][7] and is one of the most popular websites ranking in the top ten.[6][7] It contains free content and no commercial ads, and is owned and supported by the Wikimedia Foundation through donations.[8][9][10][11][12]

Wikipedia was launched on January 15, 2001, by Jimmy Wales and Larry Sanger.[13] Sanger coined its name,[14][15] as a portmanteau of "wiki" (the Hawaiian word for "quick") and "encyclopedia". Initially an English-language encyclopedia, versions in other languages were quickly developed. With at least 5,951,036 articles,[note 3] the English Wikipedia is the largest of the more than 290 Wikipedia encyclopedias. Overall, Wikipedia comprises more than 40 million articles in 301 different languages[17] and by February 2014 it had reached 18 billion page views and nearly 500 million unique visitors per month.[18]

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References


184. Haftner, Katie (August 19, 2007). "Lifting Corporate Fingerprints From the Editing of
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References

Data Collection

- English Wikipedia
- Client-side instrumentation
- 2 main rounds 4 weeks (33% sampling):
  - October ‘18
  - April ‘19
- Privacy constraints:
  - All data comes from non logged-in users only.
  - We stored only anonymised summaries.
  - Sensitive data purged after 90 days.
96M events collected
(pageLoad excluded)
96M events collected
(pageLoad excluded)
96M events collected
(pageLoad excluded)
96M events collected
(pageLoad excluded)
96M events collected
(pageLoad excluded)
RQ1:

To what extent do users engage with citations when reading Wikipedia?
Citation
Click-through rate

\[
\frac{\text{Page loads with at least 1 click}}{\text{Total page loads}}
\]

Given random page-load, what is the probability of observing an interaction with the references?
Probability of at least 1 citation click

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Probability of at least 1 citation click

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Wikipedia was launched on January 15, 2001, by Jimmy Wales and Larry Sanger as an offshoot of the Nupedia project. The name is derived from the Hawaiian language word wiki (the Hawaiian word for "quick") and encyclopedias.[13] The site is organized into articles about specific subjects and is written collaboratively by anyone with internet access. Overall, Wikipedia comprises more than 54 million articles in 301 different languages, with nearly 500 million unique visitors per month.[14]

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Probability of at least 1 footnote hover
Probability of hovers

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Transition probability

Example:

pageLoad → pageLoad → fnHover → refClick → END
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Screen shot: Wikipedia, a globe featuring glyphs from several writing systems

Type of site: Online encyclopedia
Available in: 303 languages
Owner: Wikimedia Foundation
Website: www.wikipedia.org

Screenshots [show]
Top destination of readers leaving through the references

Mainly Google Books
RQ1: Take away

- 1 in 340 page loads has clicks on the references

- 1 in 70 page loads has hover events

- The most frequent destination of the outgoing traffic from Wikipedia are Google subdomains, scientific articles, and news websites.
RQ2:

What **features of a page** predict whether a reader will interact with a citation on the page?
From the page source code

- Page length
- Number of references

From page-load data

- Popularity

From Wikimedia ORES (Scoring Platform)

- Topics
  - Vector of 42 topics: Sports, Art, Medicine, Science, Space...
- Quality class
  - Stub, Start, C-Class, B-Class, Good Article, Featured Article

52 page features
Dataset:

From the same session we extracted one page load with click (positive) on references and one without (negative).

938K sample
Quality?
Matched dataset using propensity score
Forced conditions: at least 100 page-loads in 4 weeks, difference in length no more than 10%

854K samples
Effect of Quality (Blue, Orange) and Popularity (X) on Click-through rate
Even **stronger result** by investigating

**page length**

*(one of the feature contributing to quality)*

Controlling for type of article and readers community
RQ2: Take away

- Readers tend to **interact more** (1) on the references of pages with limited content: short articles and with **poor quality**.

- Popular articles have lower CT rate.
RQ3: What **features of a citation** predict whether a reader will interact with it?
Matched dataset

One references with interaction and one without, taken from the same page-load.

1.8M pairs

Constraints:

- Negative: the closest reference
- One pair per reader
Features analysis

The words with higher positive contribution in the prediction are

**Case 1:** about recent events

2019

**Case 2:** about open access resources

Free, PDF

**Case 3:** about human aspects

born, died, relationship, family, wife, …
Empath Categories

Click event

Hover event

Sorted by decreasing difference between positive and negative
What we learned

- **RQ1:** 1 in 340 page-views has clicks on the references, and 1 in 70 has hover events

- **RQ2:** Readers tend to engage more with the references of short pages. In relative terms (CTR), popular pages shows less interaction with the references

- **RQ3:** Readers engage more with references about recent events, describing human aspects, and offering open access
What are the implications?

Results enable researchers to develop novel theories about readers’ information needs.

Results can support prioritizing efforts towards improving information reliability.

We observed the importance of open access and open science initiatives.
In Practice for Wikipedia?

Design of model to predict lack of information by using signal from interaction patterns.

Prioritize the content to expand based not the interaction level.

Prioritize the sentences that need a reference based on the readers interest.
Thank You

From Wikipedia, the free encyclopedia

"Thank you" is a common expression of gratitude.

https://meta.wikimedia.org/wiki/Research:Characterizing_Wikipedia_Citation_Usage