

INTELLIGENCE REPORT

Crawler Visibility and JavaScript-Dependent Links: A Third-Party Field Test

Reference: OPTIMUM-INT-2026-07 (Chaff Effect, supporting evidence)

Date: 11 July 2026

Status: Not peer-reviewed. Single-site, self-reported experiment. Filed as corroborating evidence, not primary research.

Prepared for: OPTIMUM knowledge base / client advisory use

Summary

A third-party website operator ran a controlled 41-day test to establish which crawlers can follow links rendered only by JavaScript, as opposed to links present in raw HTML. The test split 21 content categories in half, kept design and content identical, and logged 30,180 bot requests through edge middleware. The result: of 27 identified bots, only two (Googlebot and GoogleOther) ever executed the JavaScript and reached the hidden pages. Every AI crawler in the dataset, including GPTBot and ClaudeBot, found none of them.

This is not a peer-reviewed study and should not be cited to clients as one. It is, however, a clean and specific real-world demonstration of the mechanism that Tier 1 of the Chaff Effect already describes: that technical accessibility is a precondition for AEO and GEO signal work, not a parallel workstream. The findings are treated here as corroborating field evidence, filed against that existing thesis.

Method, as reported

- 21 categories, roughly 1,000 pages beneath them, split 11 HTML / 10 JavaScript-injected. Subcategories inherited the parent category's condition.
- Same design and content on both sides. Only the link delivery method differed.
- 41 days total: 28 days with the split live, then 13 days after reverting all links to HTML, to observe recovery behaviour.
- 30,180 bot requests captured via edge middleware logging across 27 identified bots.

Findings

1. Rendering capability is rare

Only Googlebot and GoogleOther executed the JavaScript and reached the hidden links. Bing, GPTBot, ClaudeBot, Perplexity, Meta, Amazon, DuckDuckGo and Yandex crawled zero pages behind JavaScript-only links, despite making substantial numbers of requests to the site.

2. Even Google's rendering degrades with depth

Crawl depth	HTML pages found	JS pages found (Google only)
One level down	100%	67%

Crawl depth	HTML pages found	JS pages found (Google only)
Two levels down	100%	56%
Deepest level	100% (759 of 759)	42%

Google was the only crawler capable of rendering JavaScript at all, and its coverage still fell away the deeper the JS-only links sat in the site structure. HTML links were fully crawled at every depth.

3. Speed and coverage are separate problems

Discovery speed for the first JS page (7.5 hours) was close to the first HTML page (6.1 hours). The failure was not a delay. Most crawlers never rendered the JavaScript at any point in the 28-day window, regardless of how long they were given.

4. AI crawlers read HTML only

GPTBot made 3,809 requests to the site over the test period and crawled none of the JavaScript-linked pages. This is the finding with the most direct bearing on AEO and GEO work: the crawlers responsible for grounding answers in ChatGPT and comparable tools were structurally unable to see roughly half the site's category structure.

5. The recovery pattern confirms the mechanism

After all links were converted back to HTML, GPTBot picked up 250 previously invisible pages within 48 hours, and Bingbot found 89 within the 13-day recovery window. Google, which had been able to render the JavaScript throughout, added no new pages during recovery, because it had already seen everything it was ever going to see. The other crawlers were not slow. They were blind to anything not present in the HTML source.

OPTIMUM modelling note: relationship to the Chaff Effect

This test provides field evidence for Tier 1 of the Chaff Effect as already modelled: that a site must clear a basic technical accessibility threshold before AEO or GEO signal work can register at all. The mechanism here is link visibility specifically, one clause within a broader Tier 1 category that also covers rendering, indexability and machine readability more generally.

The practical read for client audits: any category, filter or pagination structure that relies on client-side JavaScript to expose internal links should be treated as invisible to the great majority of AI crawlers, not merely as suboptimal. Twenty-six of the twenty-seven bots in this dataset never executed code at all.

This should be cited internally and to clients as a single-site experiment consistent with OPTIMUM's existing Tier 1 modelling, not as independent proof of it. The sample is one site, one framework, one operator's own logging. It corroborates the thesis; it does not establish it.

Caveats

- Single site, self-reported, not peer-reviewed and not independently verified.
- No visibility into the specific JavaScript framework, hosting environment or middleware configuration used, any of which could affect how representative the results are.

- Bot behaviour shifts over time. This is a 41-day snapshot from 2026, not a standing guarantee of crawler capability.
- Findings concern link discoverability specifically. They say nothing about how any crawler weights or ranks pages once found.

Recommendation

Retain as supporting field evidence within the Chaff Effect documentation and the OPTIMUM technical audit criteria. Where a client's category or product links depend on client-side JavaScript with no HTML fallback, this report gives a specific, named-crawler basis (GPTBot, 3,809 requests, zero pages) for treating that as a Tier 1 failure rather than a lower-priority technical note.