

Introduction

Objective:

This study investigates California Consumer Privacy Act (CCPA) compliance with a focus on Global Privacy Control (GPC), **examining the implementation of privacy flags over time**. By implementing a Selenium web crawler and using OptMeowt browser extension, **we collect and ascertain whether sites visited respect GPC signals and sell or share visitor data**.



- CCPA provides California residents **the right to opt out of the sale or sharing of users' personal information** among other privacy rights
- Businesses that met the threshold of 100,000 consumers are subject to the CCPA and **required to honor "user-enabled global privacy control, like the GPC" as a valid opt-out request**

Developed to help users to notify sites their opt-out request, **websites receiving a GPC signal must propagate this preference to third parties via privacy flags** such as the US Privacy String (USPS), the Global Privacy Platform (GPP) string, the OptanonConsent cookie, and the .well-known/gpc.json resource.

**GLOBAL
PRIVACY
CONTROL**

<https://globalprivacycontrol.org/>

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Determining CCPA Applicability

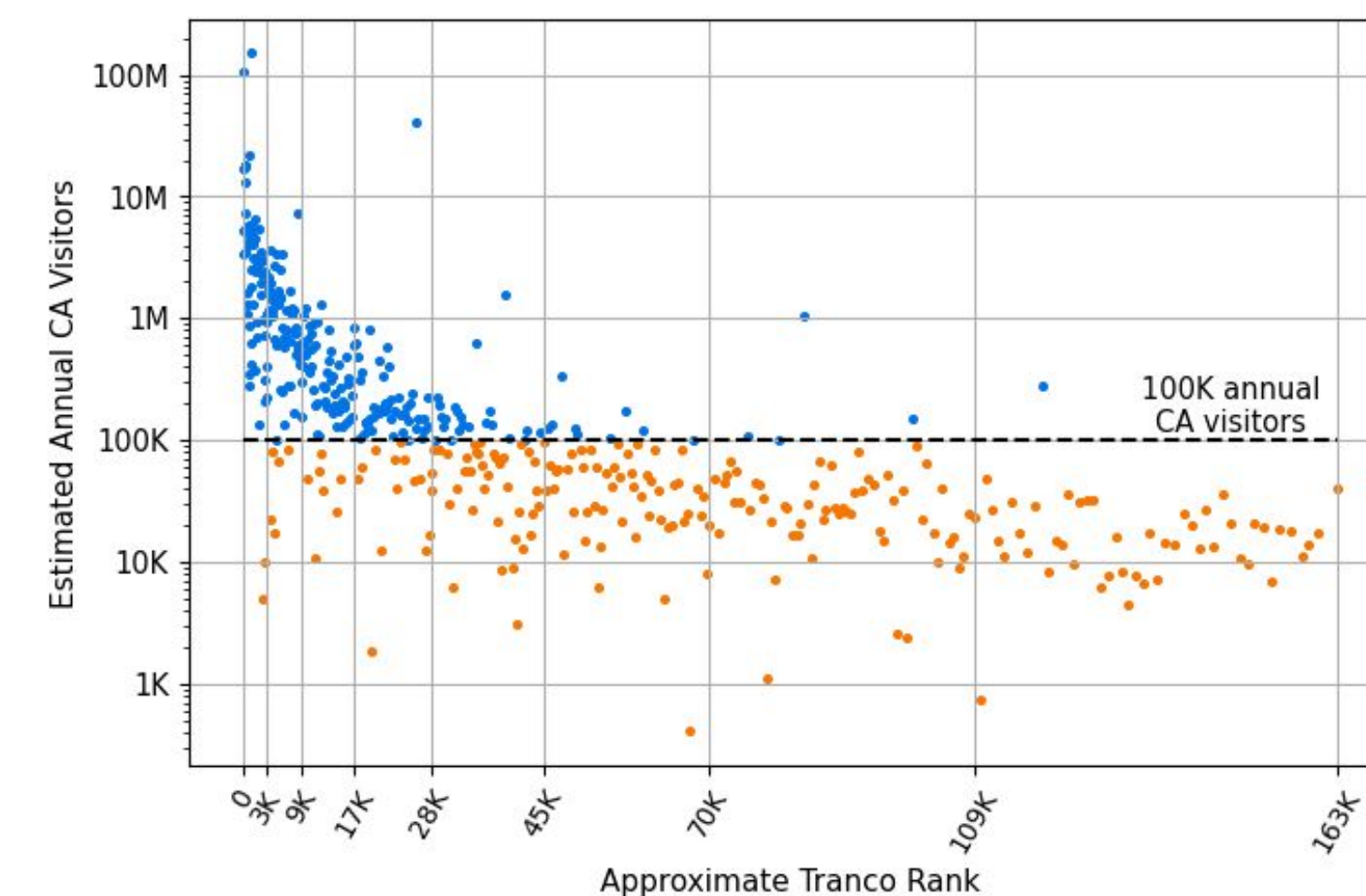


Fig. 2: Annual California Traffic for every 25th site in our crawl set

1) Business Status under CCPA

- We used Similarweb to **estimate annual traffic from California and identify sites with over 100,000 California users**. Traffic data was collected for every 25th site in our crawl set. (Fig. 2)

2) Evidence of Data Selling & Sharing:

- We examined **whether sites use third-party services that collect or buy data**. Sites integrating services from Disconnect's categories were considered. (Fig. 3)

Disconnect Category	Total Services	# of Services Analyzed	% that Target Advertising	% that Profile	% that Buy or Collect
Social	19	10	100%	100%	90%
Advertising	1,083	70	93%	87%	96%
Fingerprinting General	44	13	77%	85%	100%
Analytics	243	15	73%	80%	53%
Fingerprinting Invasive	123	9	78%	56%	78%
Social ∪ Advertising ∪ Fingerprinting General	1,097	99	91%	87%	96%

Fig. 3: Results of analyzing the privacy policies of 117 services on the September 2023 Disconnect list

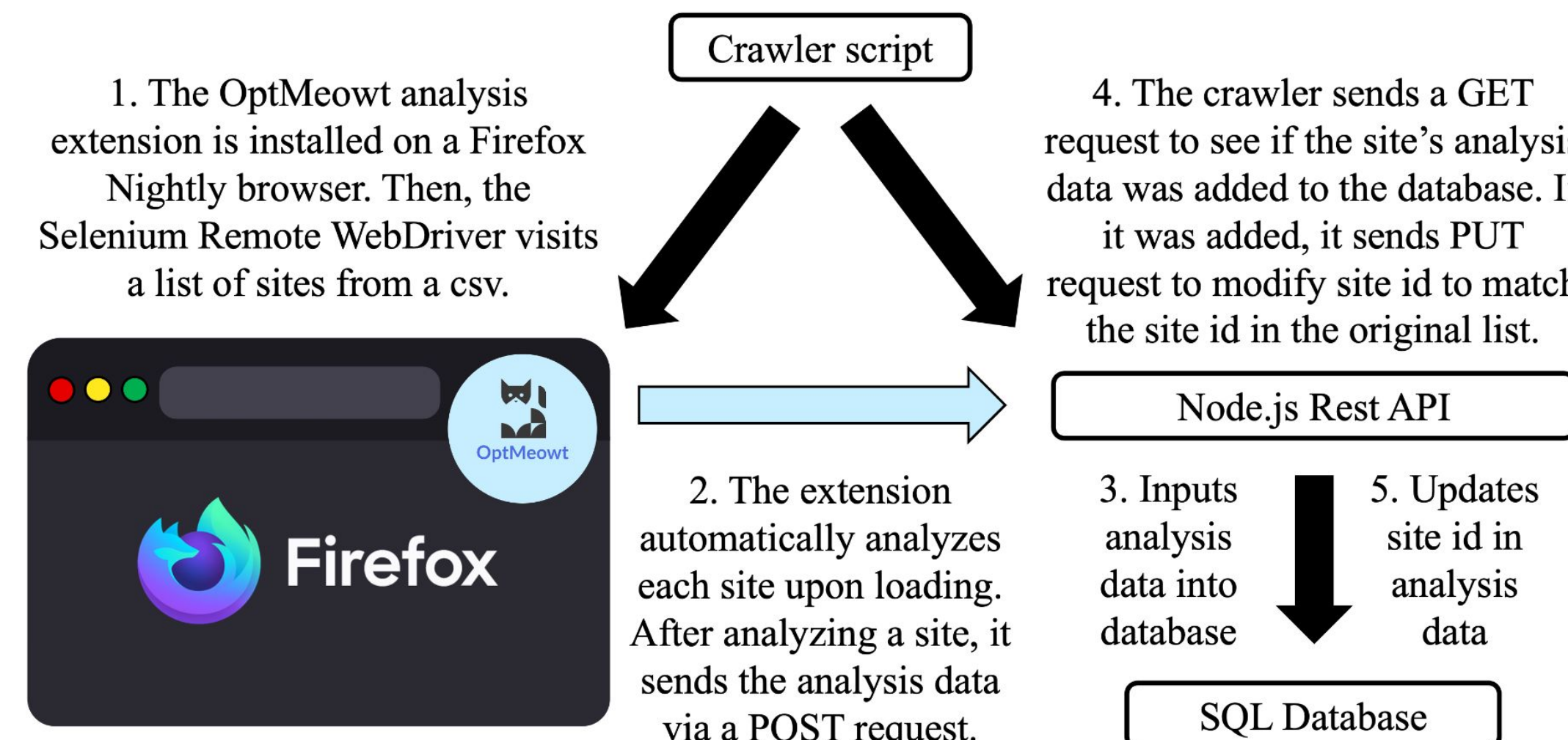
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Implementation

To assess a site's compliance with Global Privacy Control (GPC), we follow a four-step procedure:

- Verify Data Selling or Sharing:** Use Firefox's urlClassification object to check if the site sells or shares data.
- Check Privacy Strings:** Examine the values of the US Privacy string, OneTrust's OptanonConsent cookie, and the GPP string, if present.
- Send a GPC Signal:** Issue a GPC signal to the site.
- Recheck Privacy Strings:** Review the values of the US Privacy string, OptanonConsent cookie, and GPP string again after sending the signal.

Your computer (local)



Methodology

Site Selection & Crawl Set Construction

Determine CCPA Applicability

Implement Crawl

01

Crawl Set Site Selection

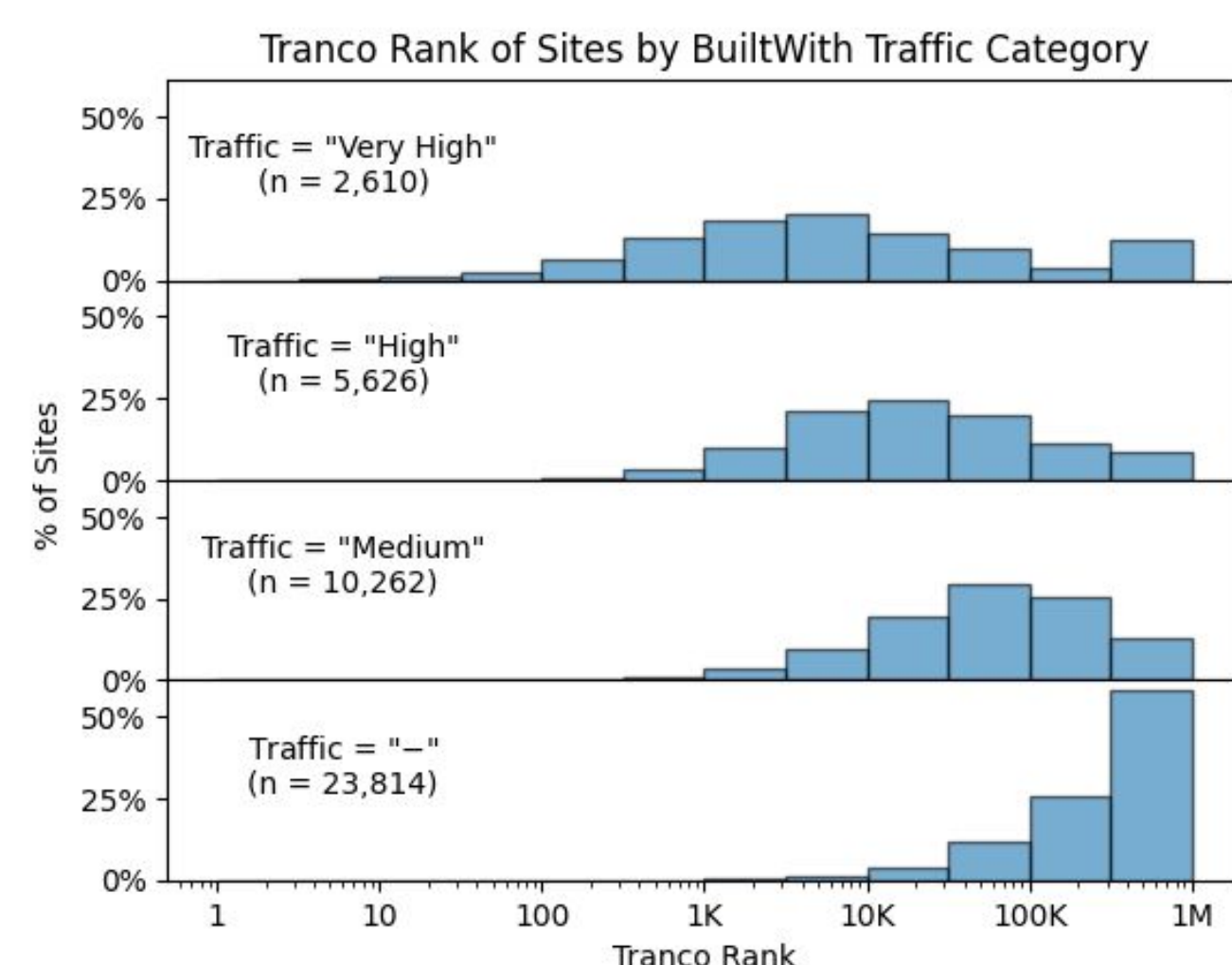


Fig. 1: A histogram of Tranco ranks for sites in each of the BuiltWith Traffic categories

- Platform Used:** BuiltWith (a lead generation service that identify sites that integrate functionality like GPC)
- Scraping:** We constructed URL paths for scraping and gathered 42,312 sites.
- Filtering:** We filtered sites based on BuiltWith's traffic category, selecting the top 11708 sites based on Tranco ranks (Fig. 1)
- Result:** The crawl set comprised of sites with a tranco rank of 163,503 or higher

Recent Results

Distribution of Privacy String Implementations (April 2024, n = 3,402)

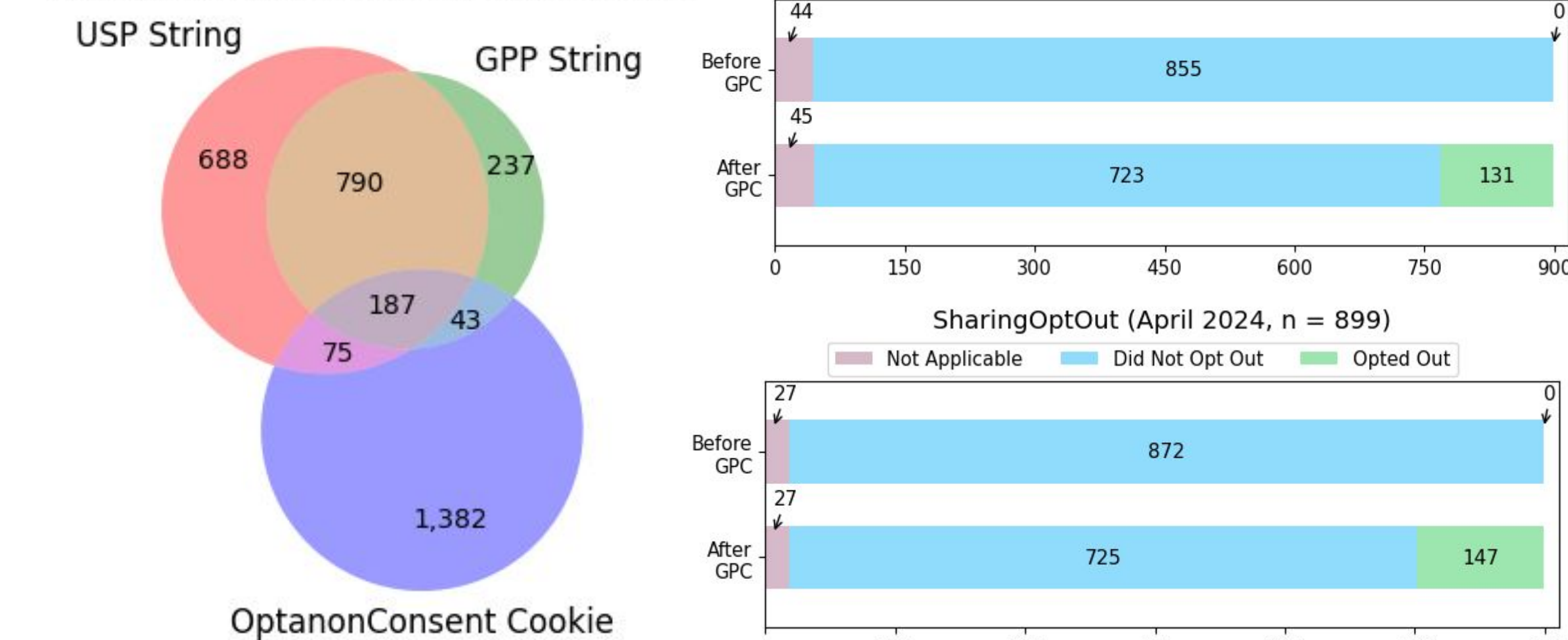


Fig. 4: Crawl results for April

Discussion:

Isolating sites that have evidence of selling and sharing data (ie. sites subjected to CCPA), we can compare the crawl results for Privacy String Adoption & Opt Outs in April and June.

In **April**, the sale and sharing opt out rates are **14.6%** (131/899) and **16.4%** (147/899) respectively. (Fig. 4)

In **June**, these rates increased to **17.6%** (159/904) and **19.6%** (177/902) respectively. (Fig. 5)

GPC Compliance is increasing slowly.

Distribution of Privacy String Implementations (June 2024, n = 3,368)

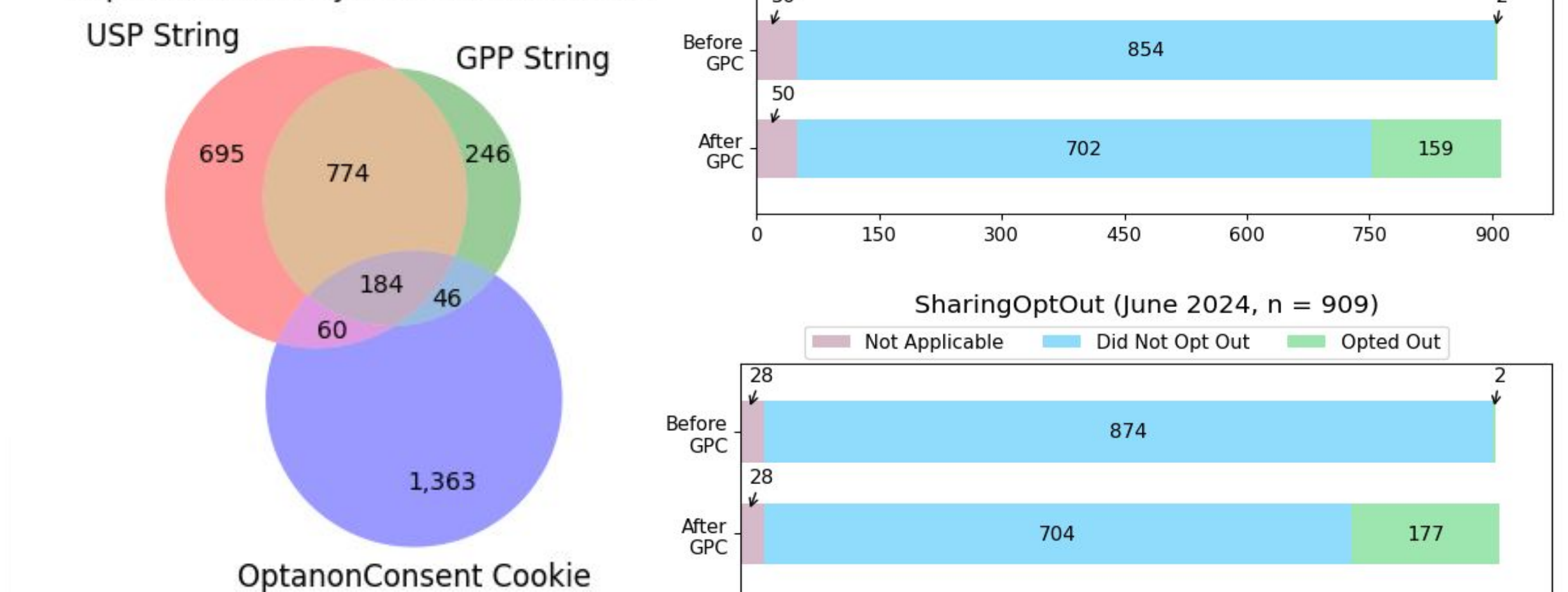


Fig. 5: Crawl results for June

Future Work

As GPC is required in Colorado since July 1, 2024 and will be required in Connecticut from January 1, 2025, we will expand our crawl analysis by including Connecticut and Colorado locations for future crawls.



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