

The online impact of privacy regulation: An early look at Europe's GDPR

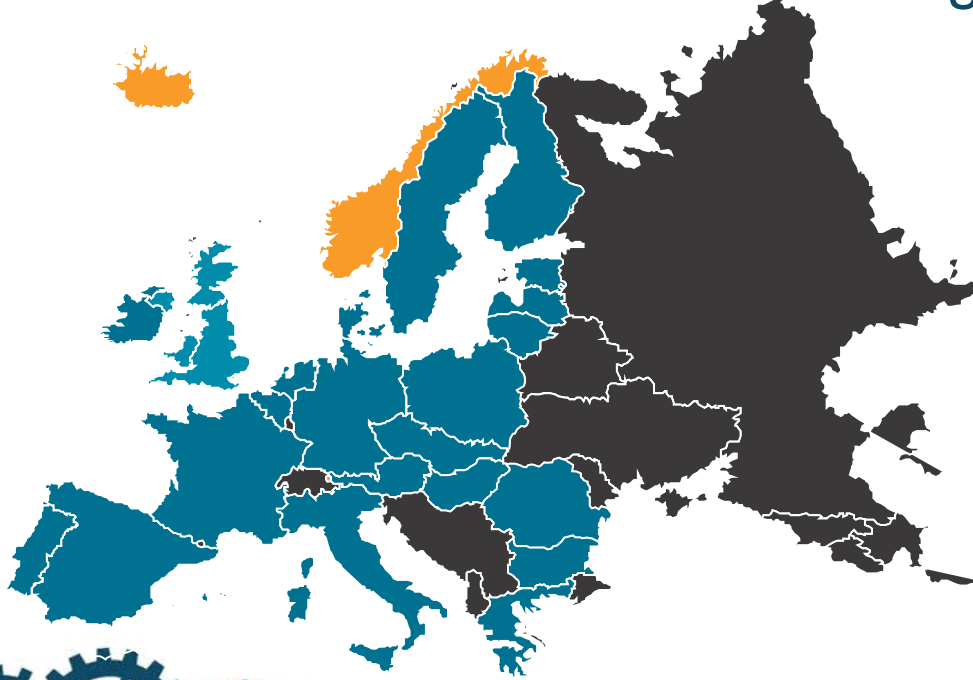
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GDPR

General Data Protection Regulation



EU
EEA
Brexit

↑ cost
processing
personal data

↓ marketing
↓ data collection



May 25 '18

GDPR Enforcement
deadline

PRIVACYCON

GDPR impact on web outcomes



My Workspace

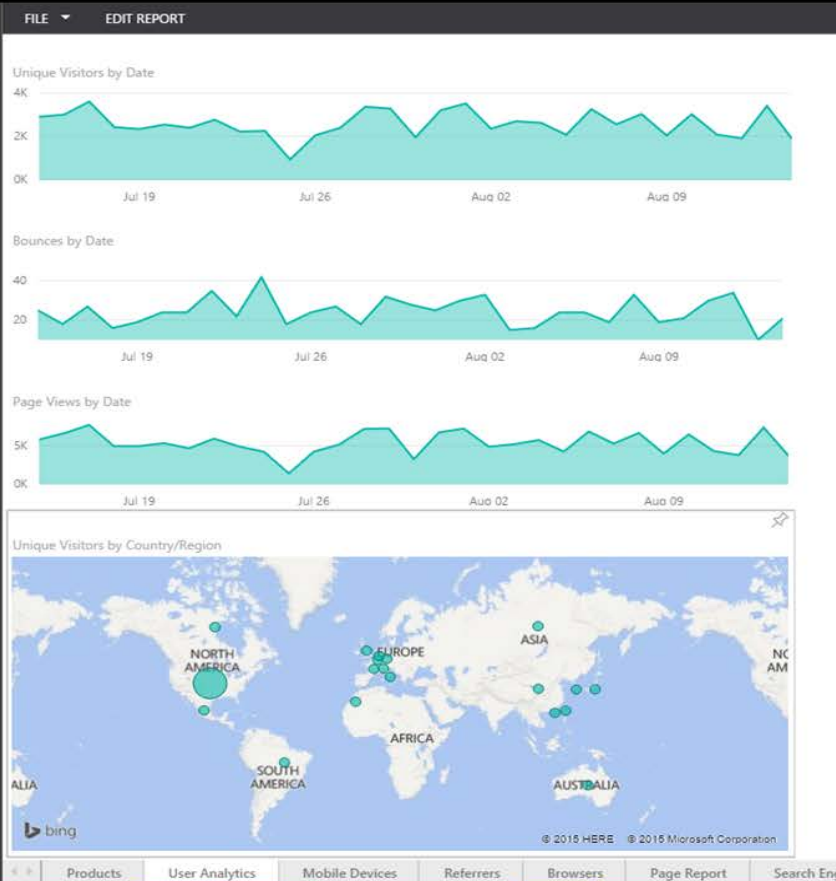
Filter content

Dashboards Adobe Analytics

Reports Adobe Analytics

Datasets Adobe Analytics

Get Data



User Analytics

1.52
Avg Time Spent

94.15%
Bounce Percent

13.58K
Entries

79.67K
Unique Visitors

164.82K
Page Views

79.98K
Visits

1,508
analytics
dashboards

How does GDPR impact recorded EU web outcomes?

*Recorded web outcomes = Total web outcomes * % recorded*

	Total web outcomes	% recorded
Site-driven	<p>Marketing: increased cost of personalized marketing</p> <ul style="list-style-type: none">Inbound marketing: e-mail (7%), display ads (3%) (Budak et al. 2016)	<p>Data minimization: sites may restrict site data collection or block EU users</p> <ul style="list-style-type: none">We drop known cases where data collection stops
User-driven	<p>Privacy salience: privacy notices change consumer browsing</p>	<p>Consent: non-consenting users (may) not be recorded</p> <ul style="list-style-type: none">GDPR consent rates reported as >90% (Quantcast)

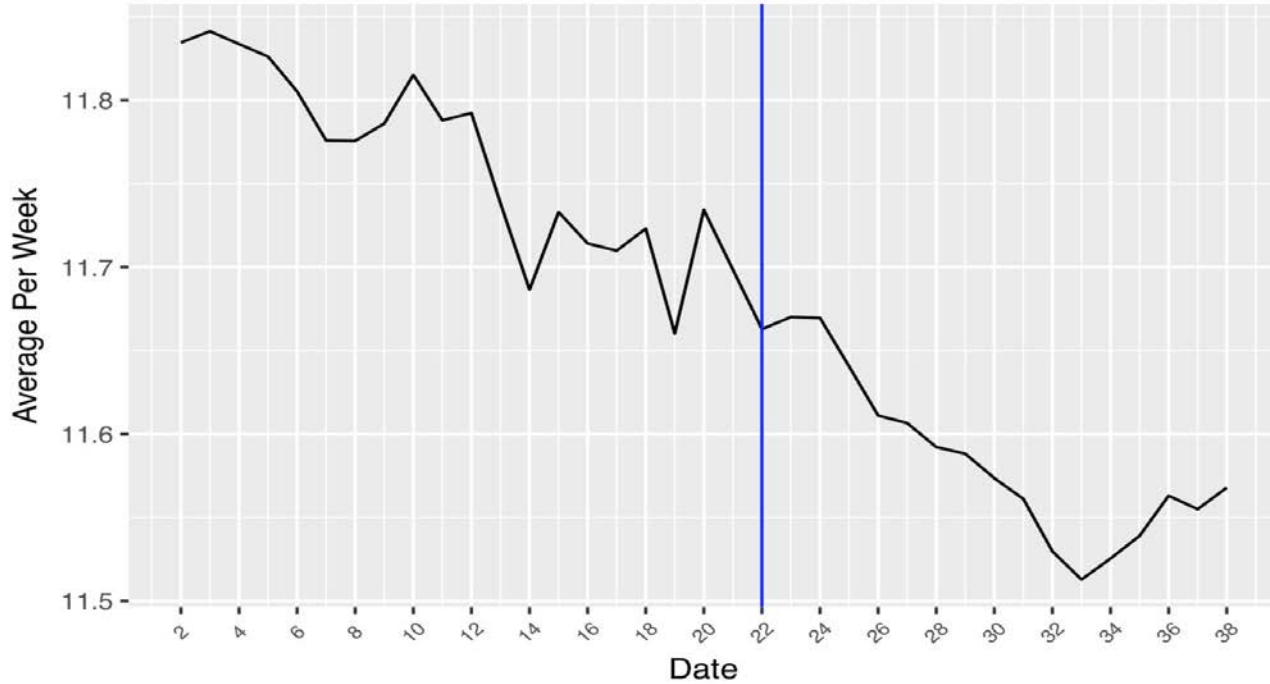
Data: On-site analytics via Adobe Analytics

- **Panel:** 1,508 analytics dashboards (RSID)
- Includes: e-commerce, corporate & content-based sites
- 421 dashboards with revenue outcome

Alexa top sites	Sample representation
top 1K	128
top 10K	595
top 1M	2,594

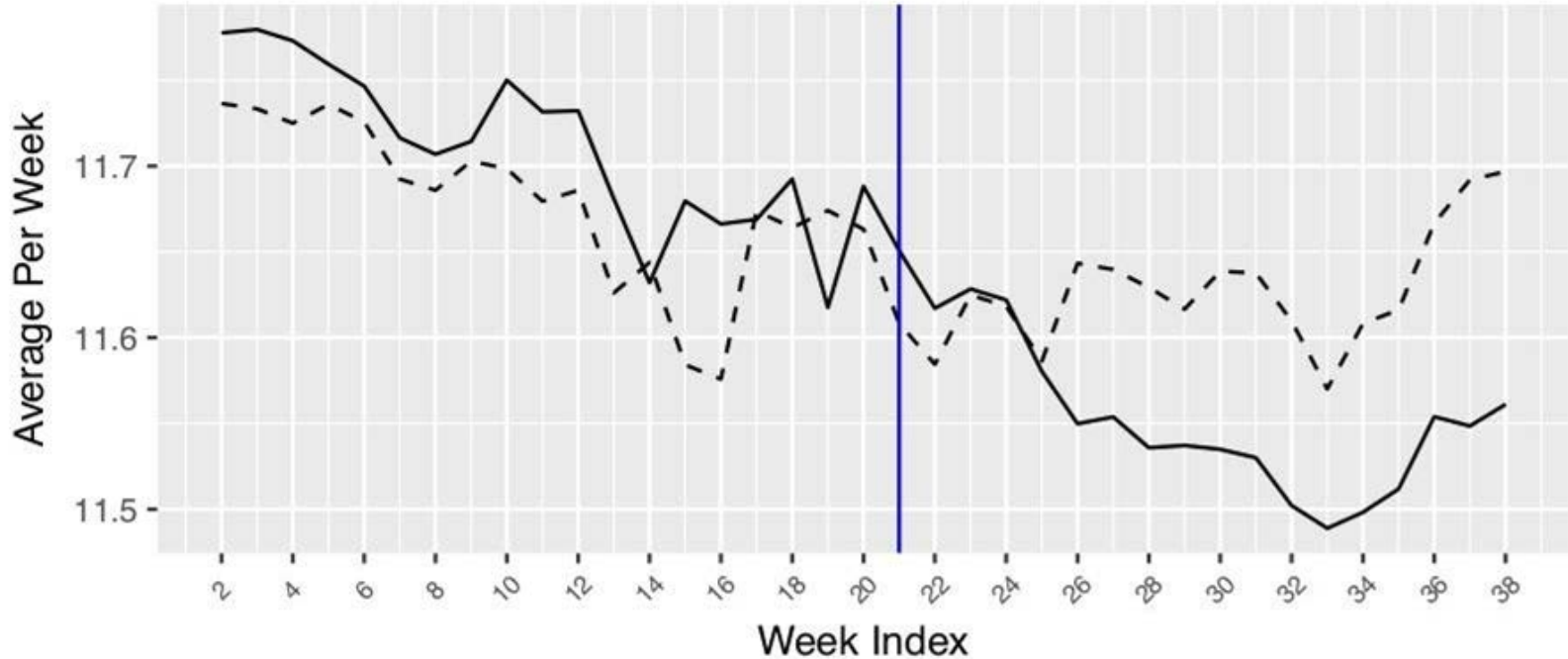
EU pageviews fall after May 25, 2018

Log Pageviews From EU



EU user site outcomes 2018 vs. 2017

Log Pageviews From EU



All recorded web outcomes fall difference-in-differences estimates

↓ 9.7%
(st.err. 2.7%)

Pageviews

↓ 9.9%
(2.5%)

Visits

↓ 5.6%
(2.5%)

Orders

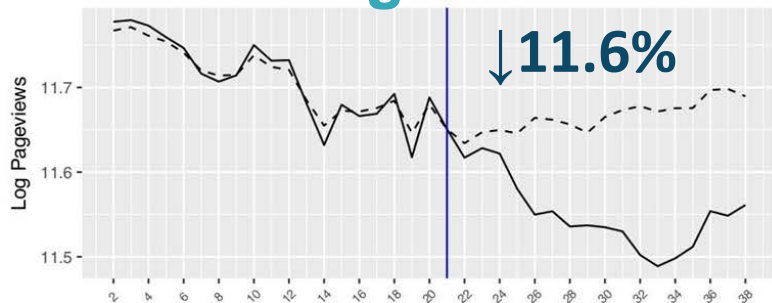
↓ 8.3%
(2.9%)

Revenue

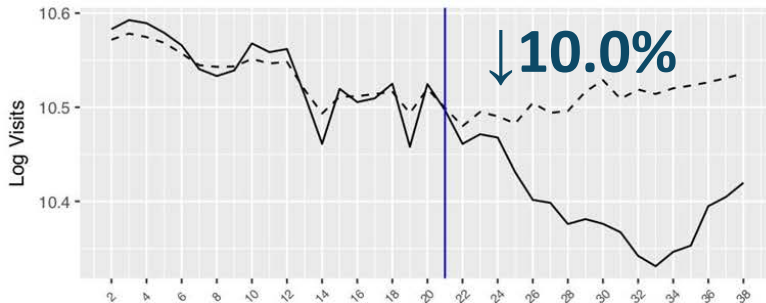
\$8,000 weekly
revenue
at the median

Synthetic controls 2017 vs. 2018 EU users

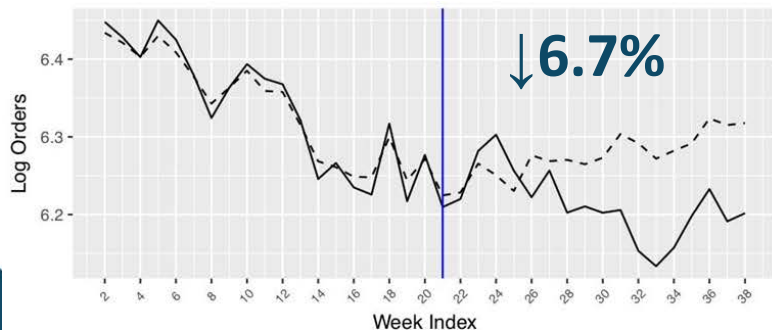
Pageviews



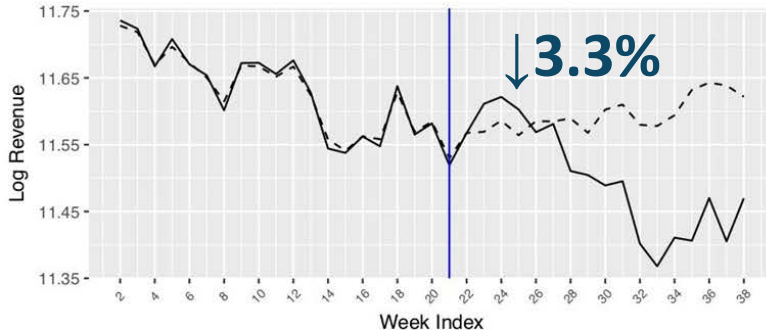
Visits



Orders



Revenue



-- Synthetic Control — Treated Data

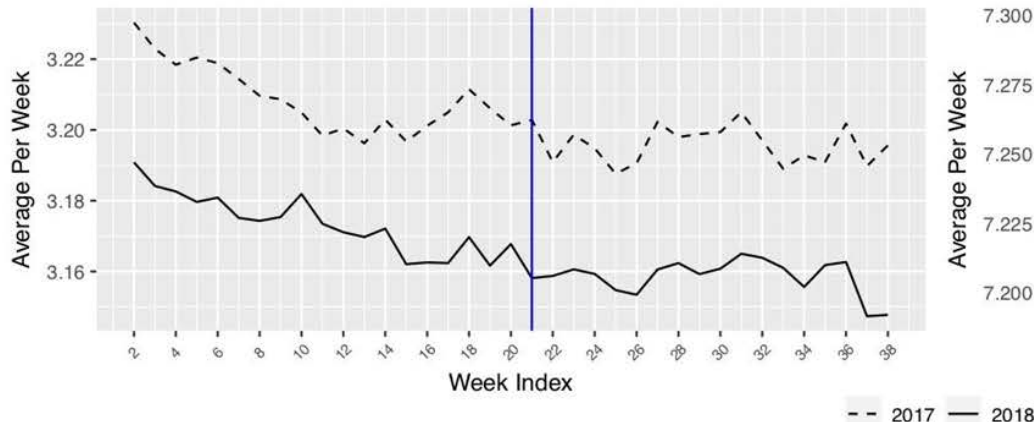
Mechanism: Why do recorded EU web outcomes fall?

$$\text{Recorded web outcomes} = \text{Total web outcomes} * \% \text{ recorded}$$

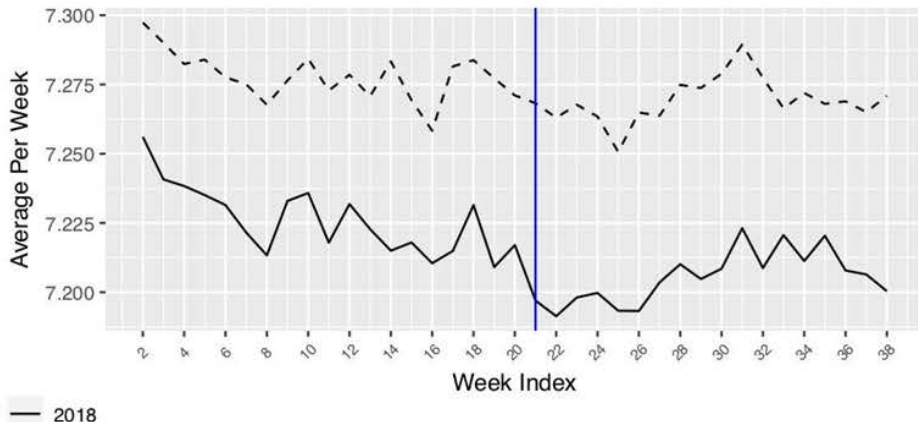
	Total web outcomes	% recorded
Site-driven	Marketing: Inbound traffic should fall for channels using personal information (e.g. e-mail)	Data minimization: We already drop known cases where data collection stops
User-driven	Privacy salience: Self-selection may change user quality measures	Consent: Self-selection may change user quality measures

But, no change in user quality metrics

Views per visit (logs)



Timespent per visit (logs)



Recorded EU web outcomes fall ~10%

*Recorded web outcomes = Total web outcomes * % recorded*

Total web outcomes

Bad for **health** of website
& e-commerce serving EU
users

% recorded

Bad for **data-driven decision-
making** of website & e-
commerce serving EU users

GDPR impact on third party domains



"The GDPR's early impact on Martech"* (work-in-progress)

- Data: **3rd party domains** across 28K top EU+ websites
- ↓**14%** 3rd party domains 1 week after May 25, **rolled back** 6 months later
 - Largest drop on sites with **least EU users** (<20%)
- Market shrinks, but is **less competitive** in top martech categories (ads, hosting, web analytics, social media)
 - Sites usually choose **dominant firm over other vendor**:
DoubleClick (99%), Google APIs (75%), Google Analytics (94%), Facebook (88%)

Value of a cookie



"Consumer privacy choice in online advertising: Who opts out and at what cost to industry?"*

(conditional accept, *Marketing Science*)

- Study **AdChoices** self-regulatory program
 - User **opt-out** for **online behavioral advertising**
- Ad exchange data: 63M ad transactions
 - 10K+ advertisers, publishers
- Only **0.23% opt-out users** in US impressions (1 in 441)
- Opt-out users fetch **52% lower prices**, all else equal
- **Publishers get 40% less revenue** from opt-out users