



pixalate

AD FRAUD BENCHMARKS

Q1 2017

POWERED BY PIXALATE MEDIA RATING TERMINAL


ABOUT

The Picalate Quarterly Ad Fraud Benchmarks report updates the digital advertising industry on the state of ad fraud in the programmatic marketplace.

Billions of dollars are lost to digital ad fraud each year. Trust and transparency are the most pressing issues in the programmatic ecosystem today, and ad fraud is at the center of the discussion.

We believe creating a more transparent marketplace is a pivotal first step in the fight against fraud. To properly tackle the problem, the industry must first fully understand the problem. Our analysis takes a deep dive into granular ad fraud statistics across devices, screens, and channels to paint the most accurate picture of the challenges.

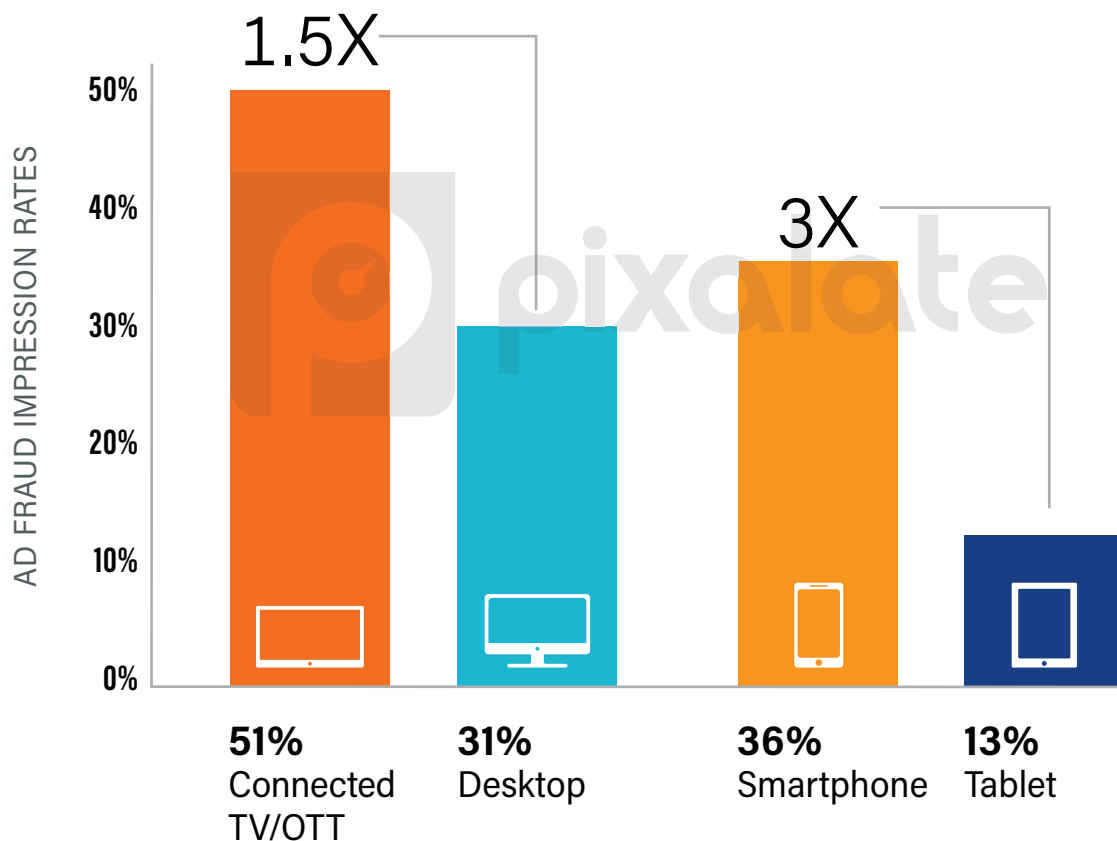
The research contained in this report gives buyers and sellers alike an honest, thorough review of the state of the industry. Our data and insights can be used as a valuable resource as the ad world combats fraud together.

 **picalate** is a leading global data intelligence platform and real-time fraud protection provider. Picalate is a Media Rating Council-certified vendor for display ad viewability.





AD FRAUD IMPRESSION RATES BY DEVICE



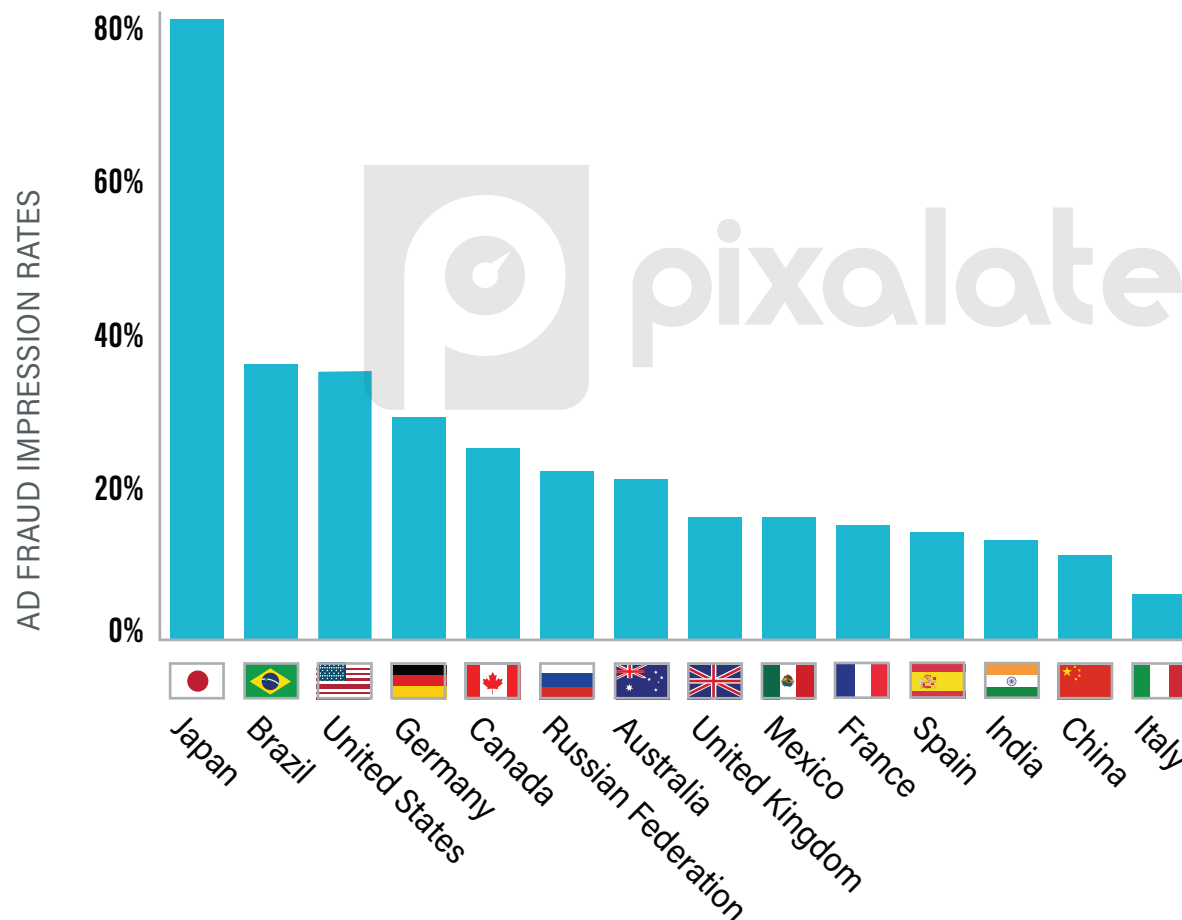
Source: Pixalate data research, global. Data inclusive of impressions available for programmatic purchase across devices, screens, and channels, Q1 2017.

Programmatic impression ad fraud rates varied across channels in Q1 2017. Some key top-level findings include:

- **Desktop:** 31% of programmatic desktop impressions were fraudulent in Q1 2017.
- **Mobile:** 36% fraud rate on smartphones, 17% fraud rate on tablets.
- **Connected TV/OTT:** 51% of connected TV/OTT impressions were fraudulent.



DESKTOP AD FRAUD IMPRESSION RATES BY COUNTRY



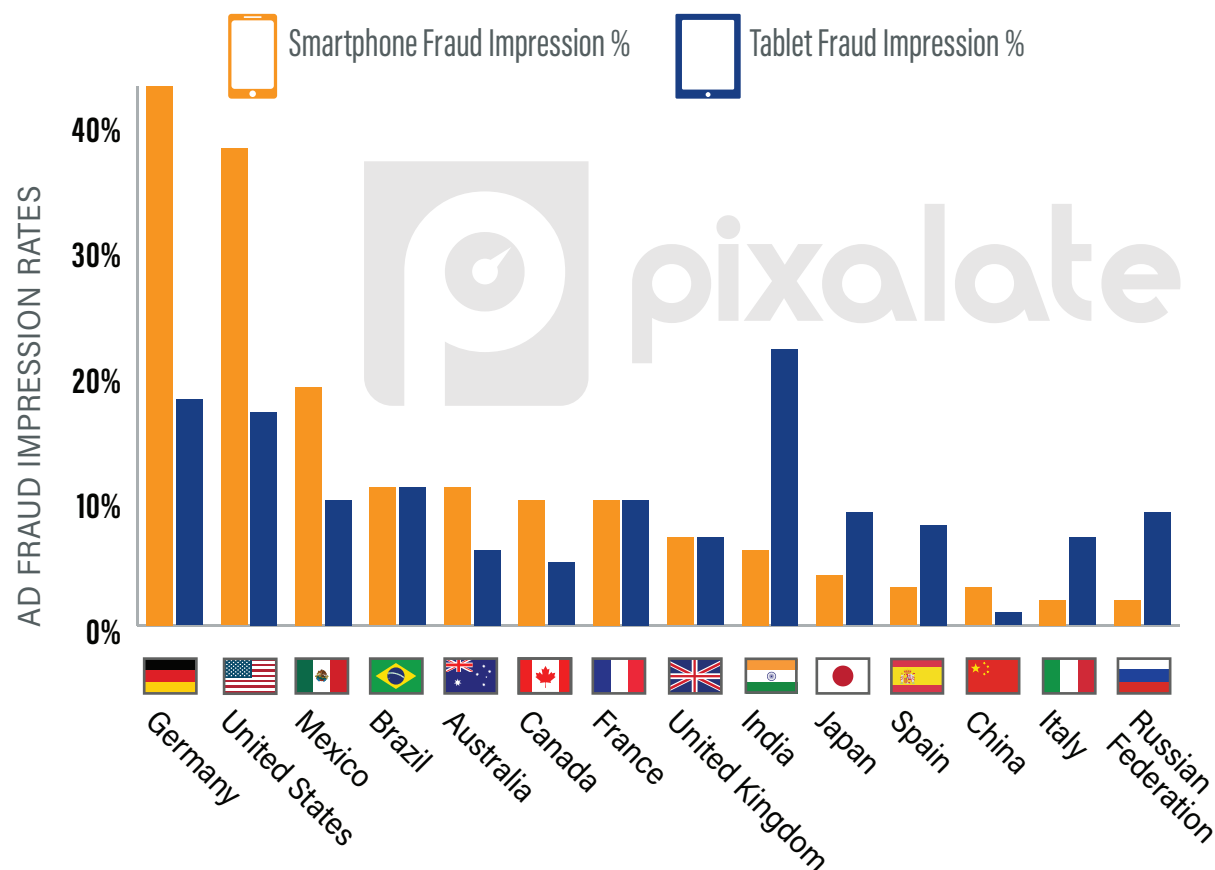
Source: Pixalate data research, global. Data inclusive of impressions available for programmatic purchase, Q1 2017.

Our insights also reveal the extent to which geography can impact programmatic ad fraud rates.

- Over one-third (35%) of programmatically-traded desktop ad impressions in the U.S. were fraudulent in Q1 2017.
- Brazil (36%) and Japan (81%) were two of the most notable countries that had higher fraud rates than the U.S.
- The U.K., the No. 3 country in terms of programmatic impression volume, had a fraudulent desktop impression rate of 16% in Q1 — less than half of what the U.S. experienced



MOBILE AD FRAUD BY COUNTRY AND DEVICE



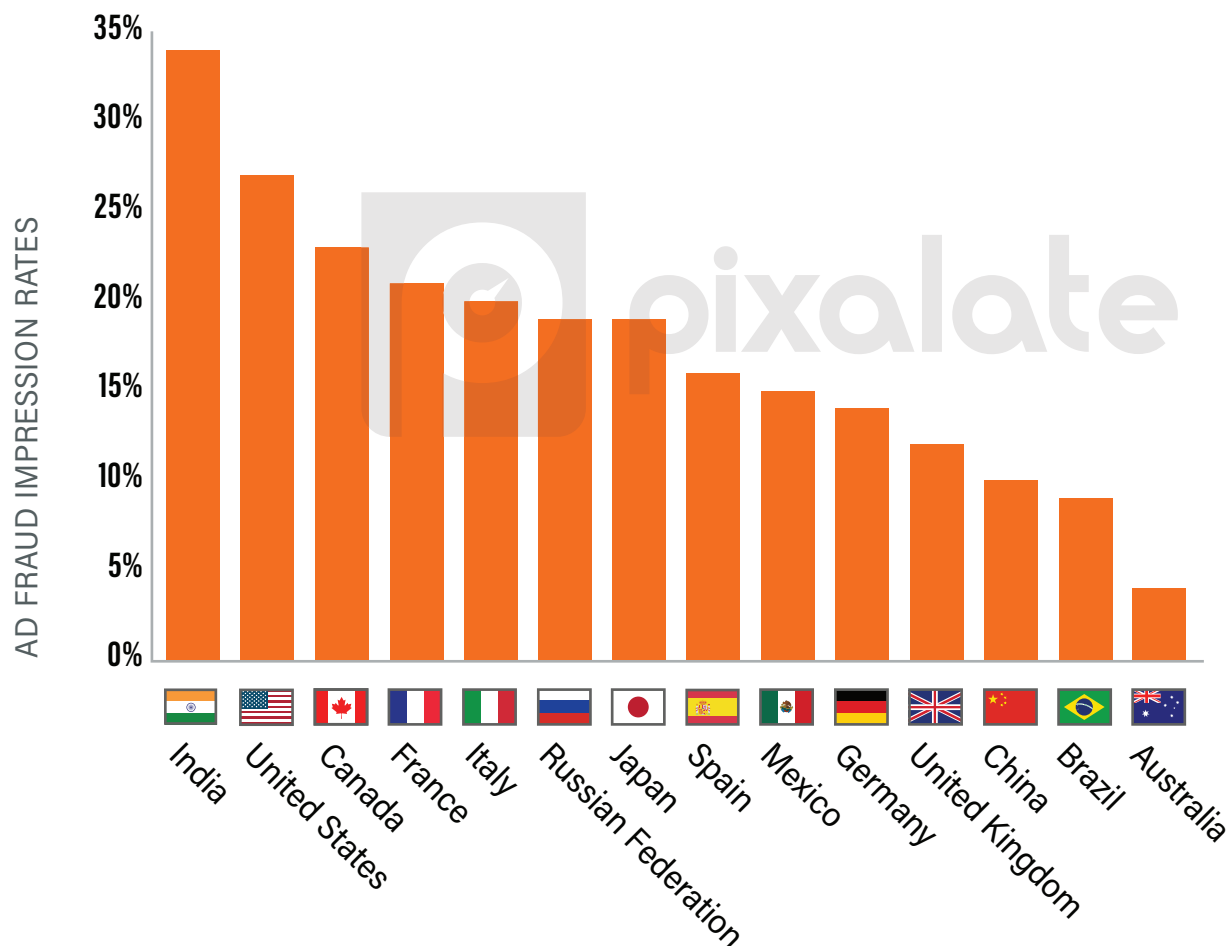
Source: Pixalate data research, global. Data inclusive of impressions available for programmatic purchase across smartphones and tablets, Q1 2017.

In the programmatic ad-buying world mobile has become king. And ad fraud rates can vary between smartphone and tablets across different countries.

- The U.S. had the fourth-highest smartphone ad fraud rate of any country in the entire world, at 38%.
- Greece (48%), Germany (43%), and Malaysia (40%) were the only countries which saw higher programmatic mobile ad fraud rates than the U.S.
- The U.S. saw tablet ad fraud at a rate of 17%
- The U.K. had nearly identical smart-phone and tablet ad fraud rates (7%).



VIDEO AD FRAUD IMPRESSION RATES BY COUNTRY



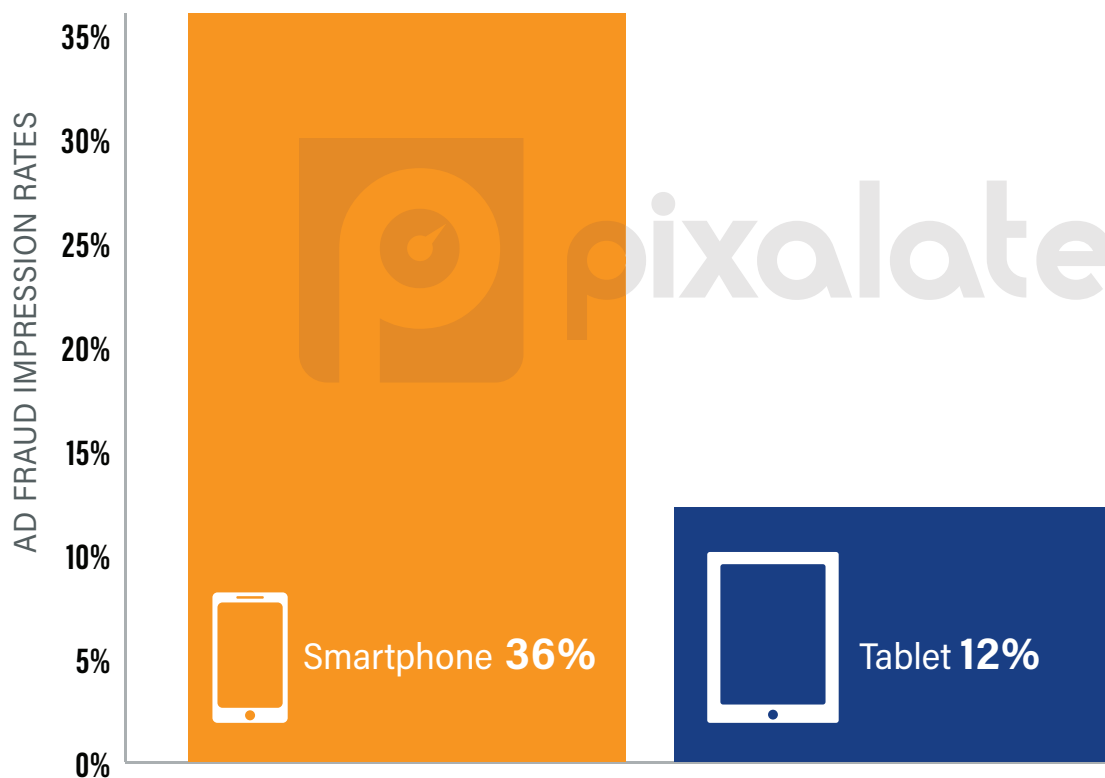
Source: Pixalate data research, global. Data inclusive of impressions available for programmatic purchase, Q1 2017.

We also uncovered revealing figures about programmatic video ad fraud rates in Q1 2017:

- In the U.S., 27% of programmatic video impressions were fraudulent during Q1 2017.
- Canada (23%), France (21%), Italy (20%), Russia (19%), and Japan (19%) all had similar video ad impression fraud rates, at roughly one-in-five.
- The U.K. had a programmatic video ad fraud rate of 12% — roughly half of the U.S.'s figure.
- Among leading countries in terms of programmatic supply, only Brazil (9%) and Australia (4%) had programmatic video ad fraud rates below 10%.



APP AD FRAUD IMPRESSION RATES BY DEVICE



Source: Pixalate data research, global. Data inclusive of in-app impressions available for programmatic purchase across smartphones and tablets, Q1 2017.

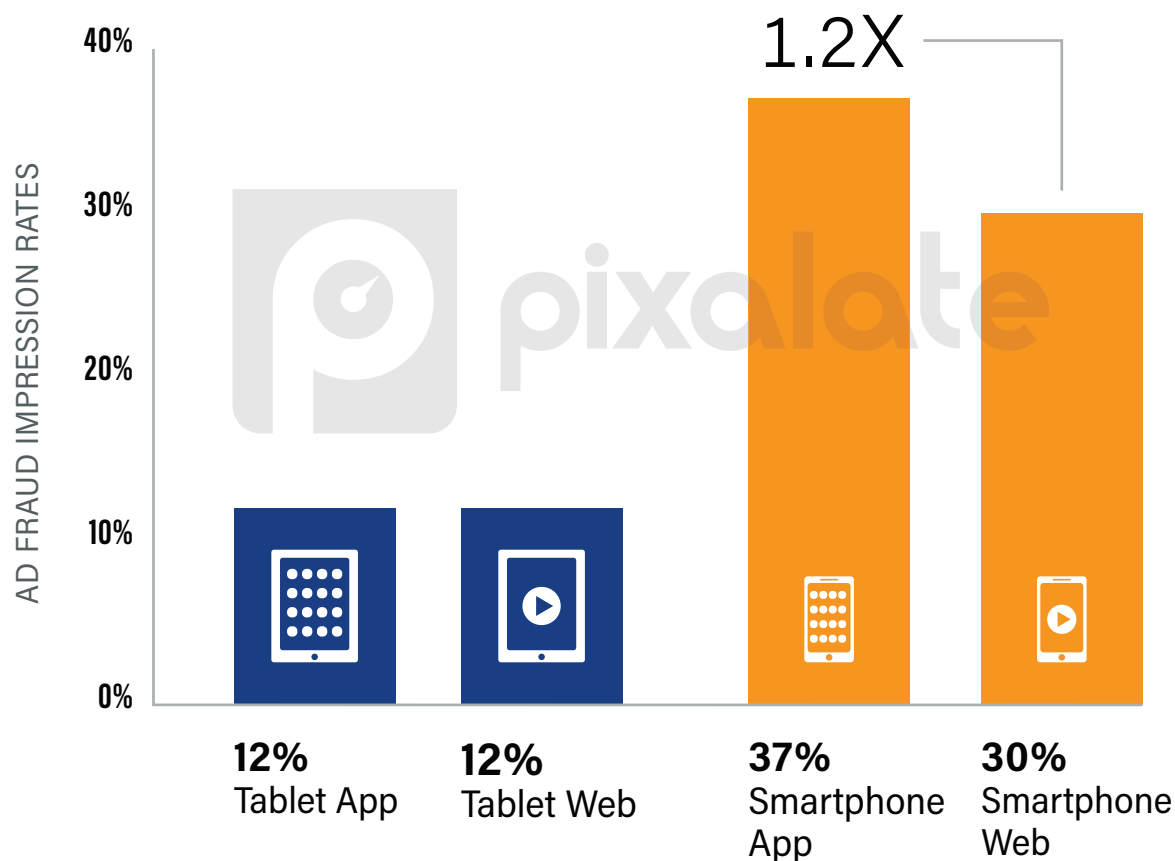
The ad industry often uses the word “mobile” to describe both smartphone and tablet inventory. But, at least in the ad fraud world, mobile is truly a tale of two devices.

- **Smartphones:** Over one-third (36%) of in-app programmatic inventory was fraudulent..
- **Tablets:** 12% of in-app programmatic inventory was fraudulent.

This large, notable difference in in-app ad fraud rates could have a profound impact on any media buyer who approaches smartphone and tablet fraud equally.



SMARTPHONE VS. TABLET DISPLAY AD FRAUD RATES



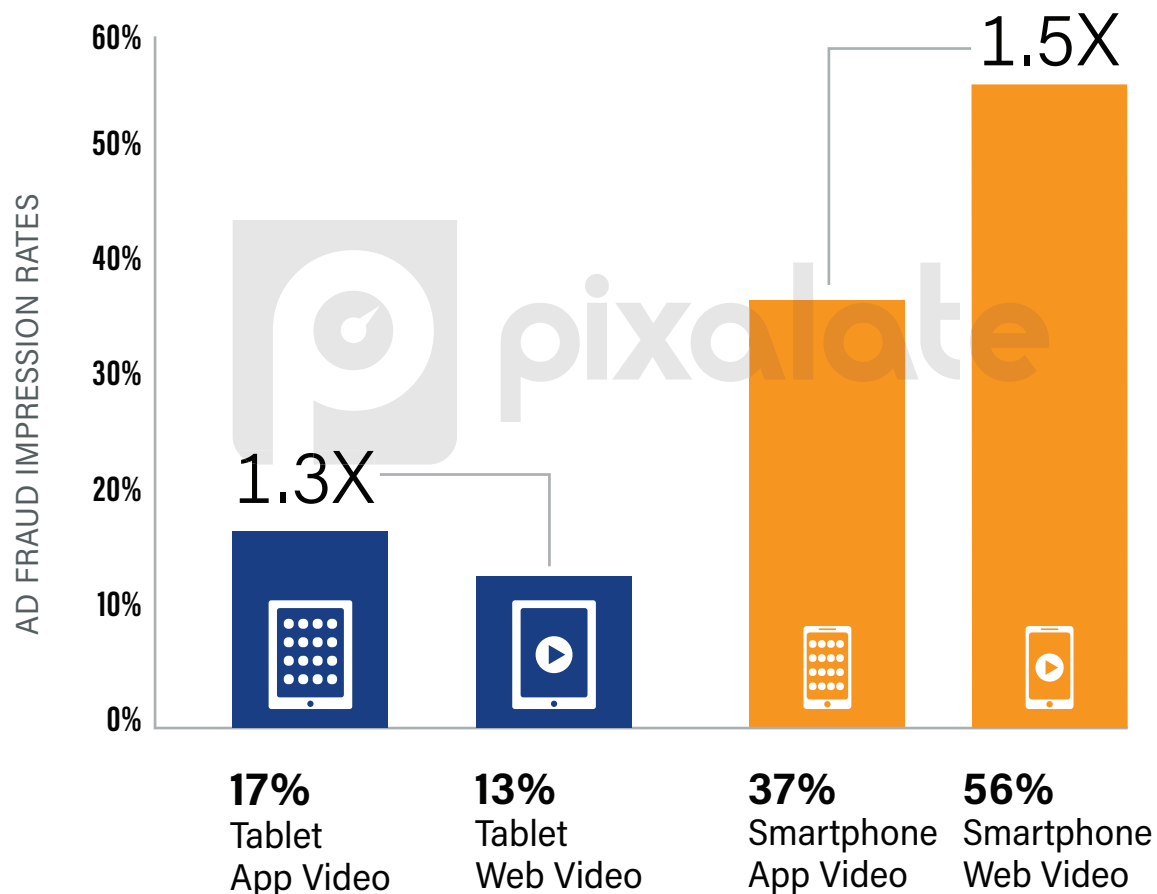
Source: Pixalate data research, global. Data inclusive of impressions available for programmatic purchase across smartphones and tablets, Q1 2017.

The discrepancy between smartphone and tablet ad fraud rates extends beyond in-app environments as well.

- Smartphone app display inventory is 1.2x more likely to be fraudulent than smartphone web inventory.
- Tablets, meanwhile, have equal app and web fraud rates, at 12%.
- Upwards of one-in-three ad dollars spent on display advertising on smartphones are wasted, and upwards of one-in-ten are wasted on tablet display ads.
- Overall, for mobile display advertising, smartphone inventory is up to 3x more likely to be fraudulent than tablet inventory.



SMARTPHONE VS. TABLET VIDEO AD FRAUD RATES



Our research reveals that device type can also have an immense impact on mobile video ad fraud rates.

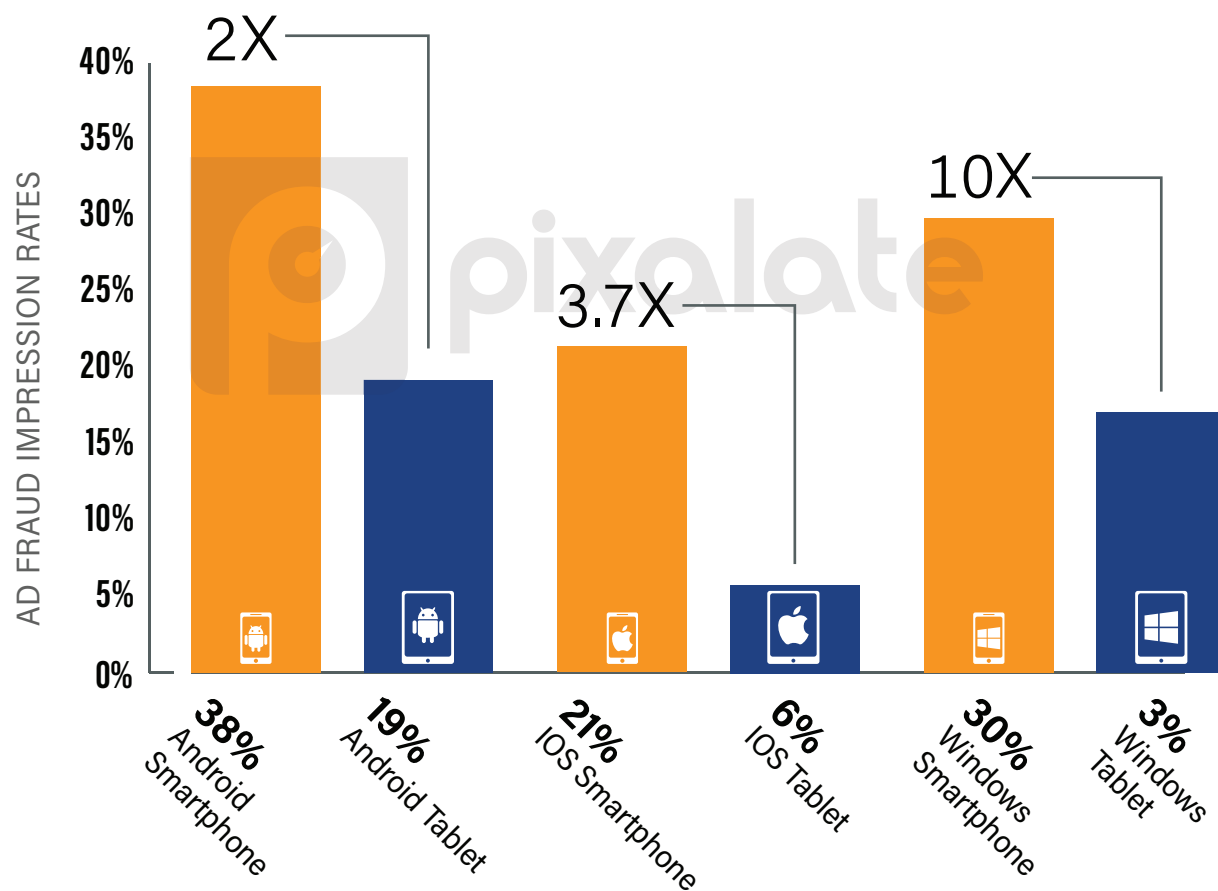
- Tablet app video ad fraud was 17%
- Tablet web video was fraudulent roughly 13% of the time.
- Smartphone web video inventory was fraudulent 56% of the time
- Smartphone app video ad fraud rates were 37%
- Smartphone app video inventory was roughly 3x more likely to be fraudulent than tablet app inventory
- Smartphone web video was roughly 5x more likely to be fraudulent than tablet web video.

Source: Pixalate data research, global. Data inclusive of video ad impressions available for programmatic purchase across smartphones and tablets, Q1 2017.



MOBILE: AD FRAUD BY DEVICE AND OPERATING SYSTEM

MOBILE AD FRAUD RATES BY DEVICE AND OPERATING SYSTEM



Source: Pixalate data research, global, data for smartphone and tablet users across operating systems. Data shows difference in ad fraud rates between devices and OS, Q1 2017.

We also uncovered the differences in ad fraud rates across major mobile operating systems, including Android, iOS, and Windows.

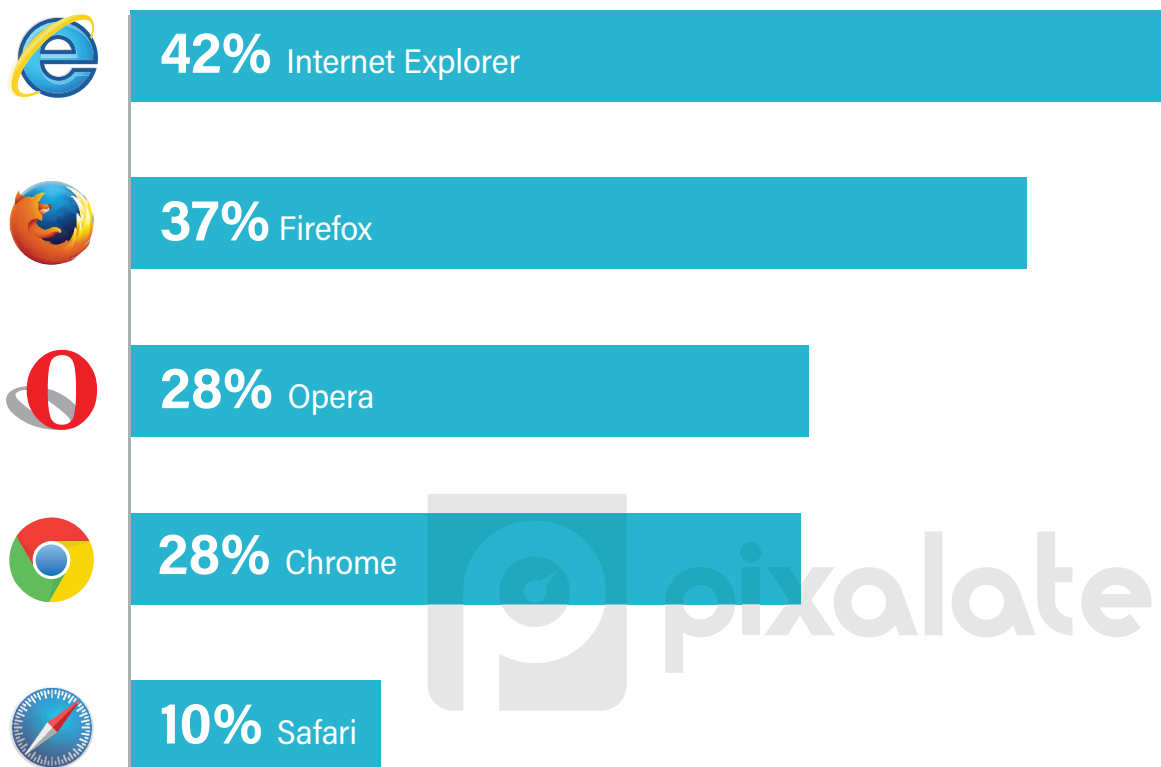
- Android: Smartphone ad inventory is 2x more likely to be fraudulent than tablet inventory
- iOS: Smartphone app video inventory is 3.7x more likely to be fraudulent than tablets
- Windows: Smartphone ad inventory is 10x more likely to be fraudulent than tablets

Additionally, our study found:

- Android's smartphone ad fraud rate of 38% is 1.8x higher than Apple's rate of 21%.
- Android's tablet ad fraud rate of 19% is over 3x higher than Apple's rate of 6%



AD FRAUD RATES BY BROWSER



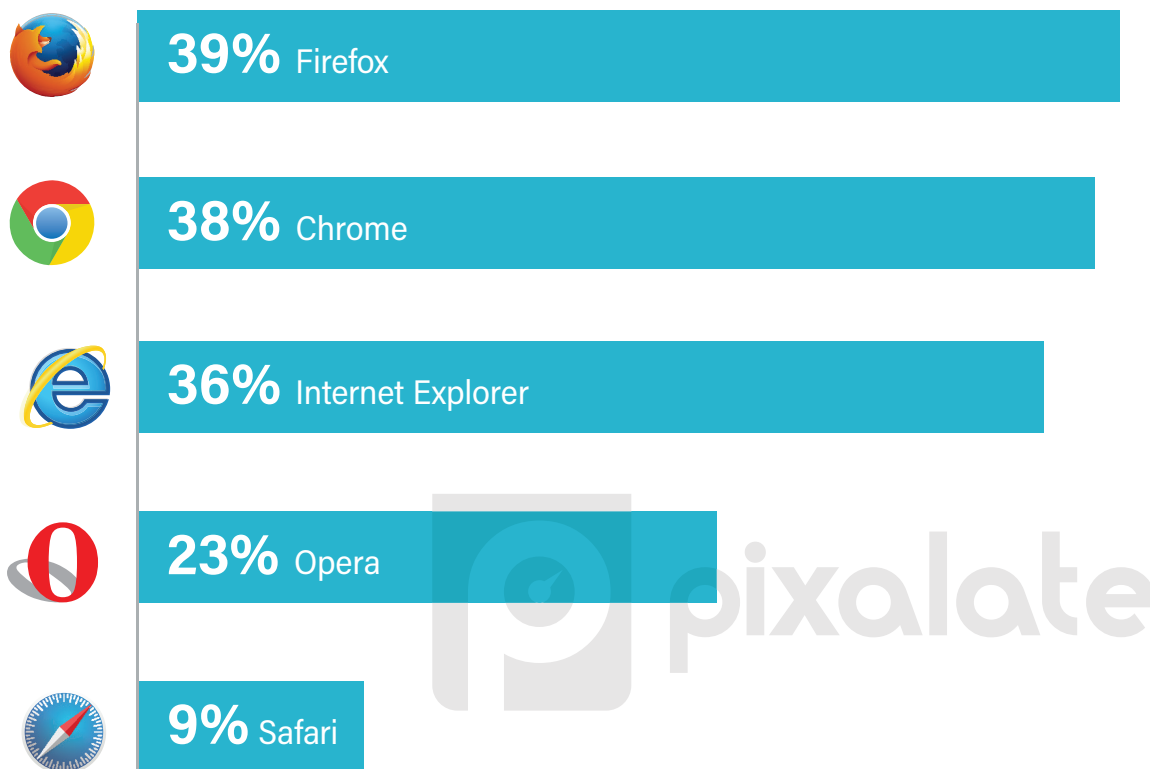
Source: Pixalate data research, global. Data inclusive of impressions available for programmatic purchase across common web browsers, Q1 2017.

Each web browser is susceptible to ad fraud in its own way. Here are some of our key findings for the world's most popular web browsers.

- Google Chrome, the most popular browser, had an ad fraud rate of 28%.
- Internet Explorer had an ad fraud rate of 42%, most of all major browsers.
- Safari, the third of the “big three” browsers, had a significantly lower programmatic ad fraud rate, at 10%.
- Firefox (37%) had the second-highest ad fraud rate of the five biggest browsers.
- Opera's ad fraud rate of 28% was equivalent to Chrome's.



MOBILE AD FRAUD RATES BY BROWSER



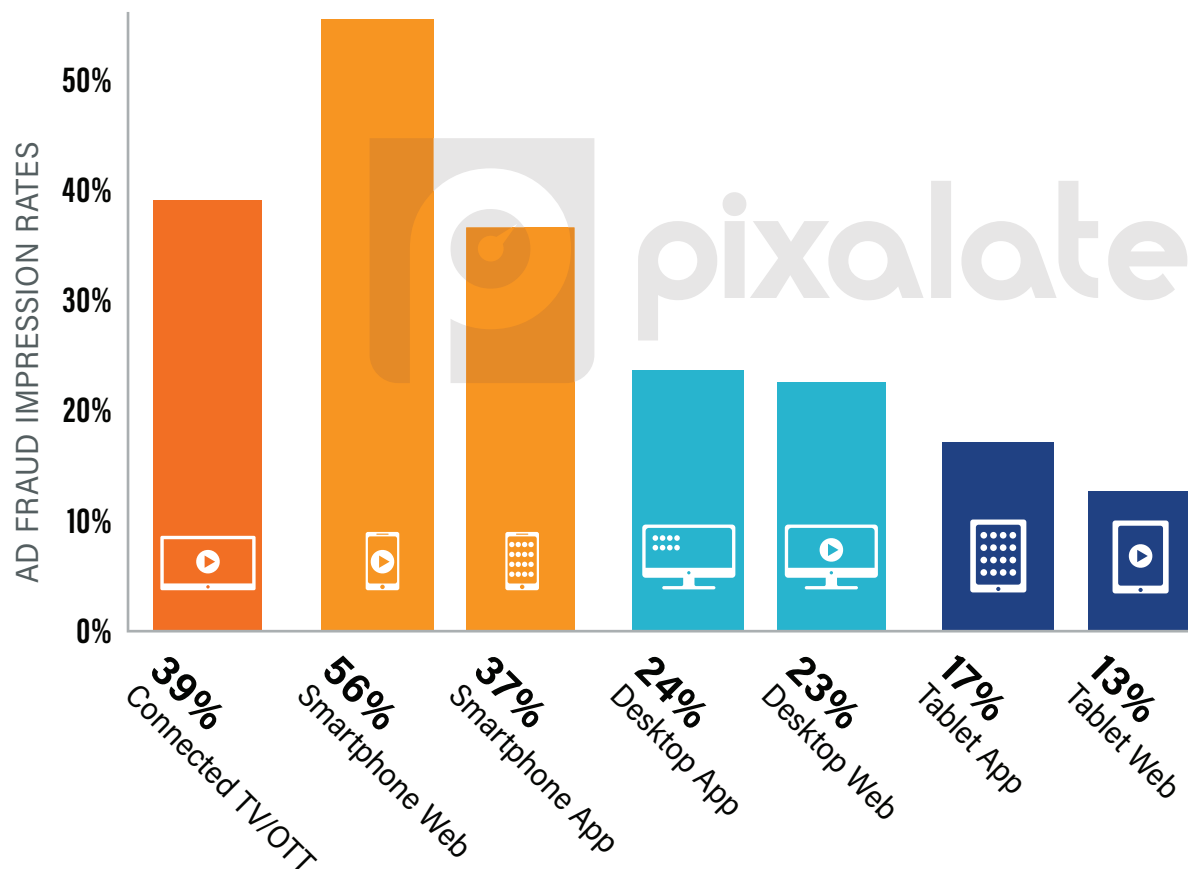
Source: Pixalate data research, global. Data inclusive of impressions available for programmatic purchase across common web browsers, Q1 2017.

The most popular web browsers have different ad fraud rates on mobile devices as well:

- Chrome's mobile-only ad fraud rate was 38%, higher than its desktop ad fraud rate.
- Safari's (9%) mobile-only ad fraud rate is significantly lower than all of the other major browsers.
- Safari (9%), Firefox (39%), and Opera (23%) all have similar mobile-only ad fraud rates compared to their desktop ad fraud rates.



VIDEO AD FRAUD IMPRESSION RATES BY DEVICE & CHANNEL



Source: Pixalate data research, global. Data inclusive of video ad impressions available for programmatic purchase, Q1 2017.

One of the many perks of the increasingly cordless world of entertainment is the ability to watch videos on a variety of devices and screens. For marketers and publishers hoping to avoid ad fraud, however, it only increases the number of factors they have to pay attention to. Video ad fraud rates can vary considerably based on device and channel.

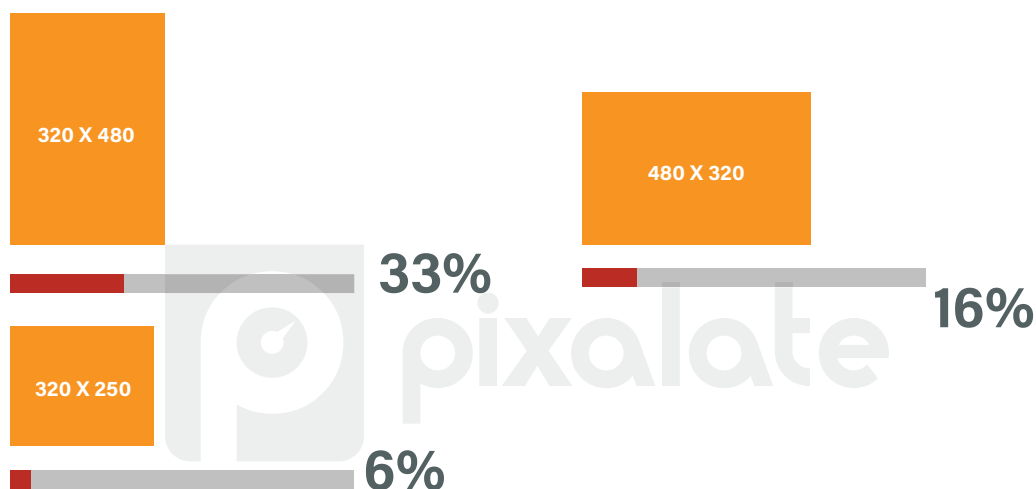
- Smartphone web video inventory was fraudulent over half (56%) of the time.
- Smartphone app video inventory had a fraud rate of 37%.
- Connected TV/OTT had a 39% fraud rate.
- Desktop app and web had nearly identical video ad fraud rates, at 24% and 23%, respectively.



MOBILE APP VIDEO AD FRAUD RATES BY AD UNIT SIZE



TABLET APP FRAUD RATES



Tablet apps feature several different common ad units for video buyers and sellers, and each ad unit is targeted by fraudsters in its own unique way:

- The 320x480 tablet video ad unit was fraudulent 33% of the time in Q1 2017.
- The 480x320 ad unit had an ad fraud rate of 16% on tablets.
- The 320x250 video ad unit was fraudulent 6% of the time.

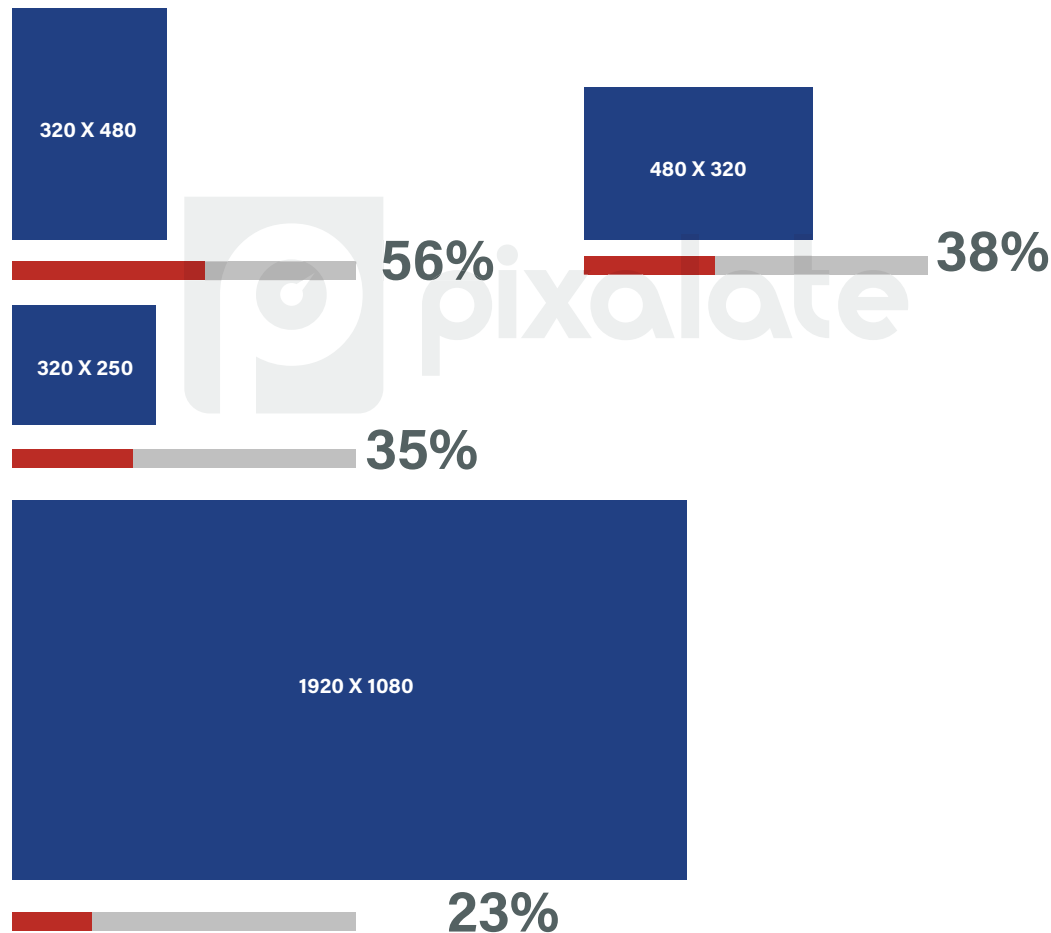
Source: Pixalate data research, global. Data inclusive of ad impressions available for programmatic purchase, Q1 2017.



MOBILE APP VIDEO AD FRAUD RATES BY AD UNIT SIZE



SMARTPHONE APP FRAUD RATES



Our research found that fraudsters go hard after the most common ad unit sizes for video ads within smartphone apps:

- The 320x480 video ad unit within smartphone apps was fraudulent 56% of the time.
- The 480x320 ad unit was fraudulent 38% of the time.
- The 320x250 video unit had an inapp ad fraud rate of 35% on smartphone.
- The 1920x1080 unit (full-screen) had an ad fraud rate of 23%.

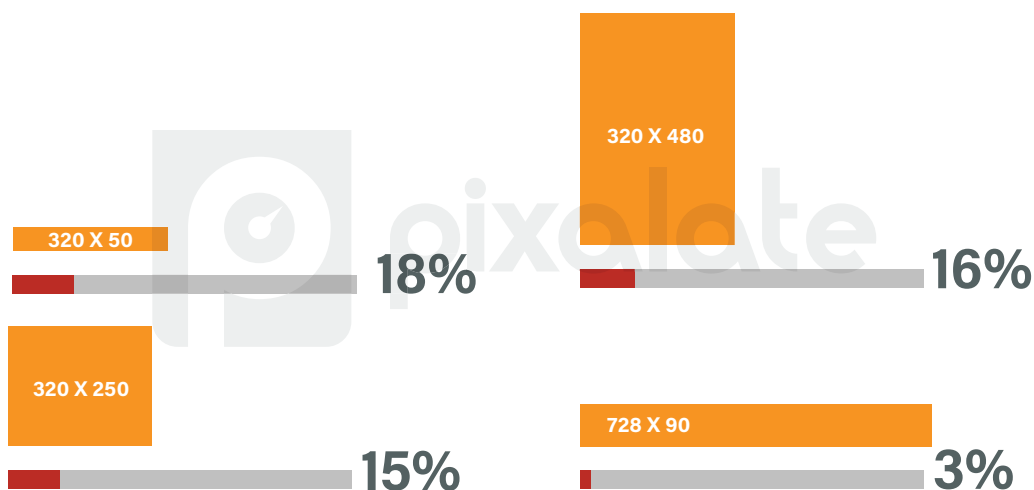
Source: Pixalate data research, global. Data inclusive of ad impressions available for programmatic purchase, Q1 2017.



MOBILE DISPLAY AD FRAUD RATES BY AD UNIT SIZE

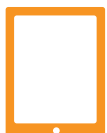


TABLET APP FRAUD RATES

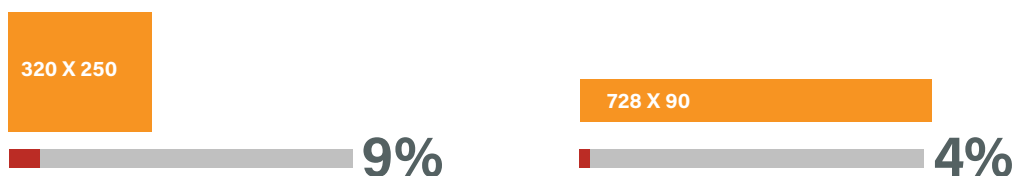


Fraudsters target different ad units across tablet web and app inventory:

- The 320x50 ad unit was fraudulent 18% of the time within tablet apps in Q1 2017.
- The 320x480 tablet app display ad unit had an ad fraud rate of 16%.
- The 320x250 app unit had a fraud rate of 15%, while the 320x250 web unit had a lower ad fraud rate, at 9%.



TABLET WEB FRAUD RATES



Source: Pixalate data research, global. Data inclusive of ad impressions available for programmatic purchase, Q1 2017.



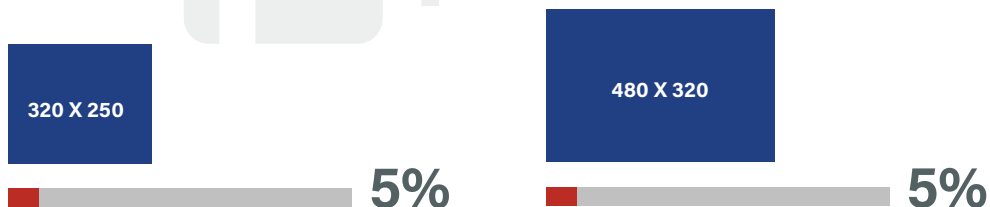
MOBILE DISPLAY AD FRAUD RATES BY AD UNIT SIZE



SMARTPHONE APP FRAUD RATES



SMARTPHONE WEB FRAUD RATES



Interestingly, despite the high overall ad fraud rate for mobile web display inventory, there isn't one common ad unit that's specifically targeted by fraudsters.

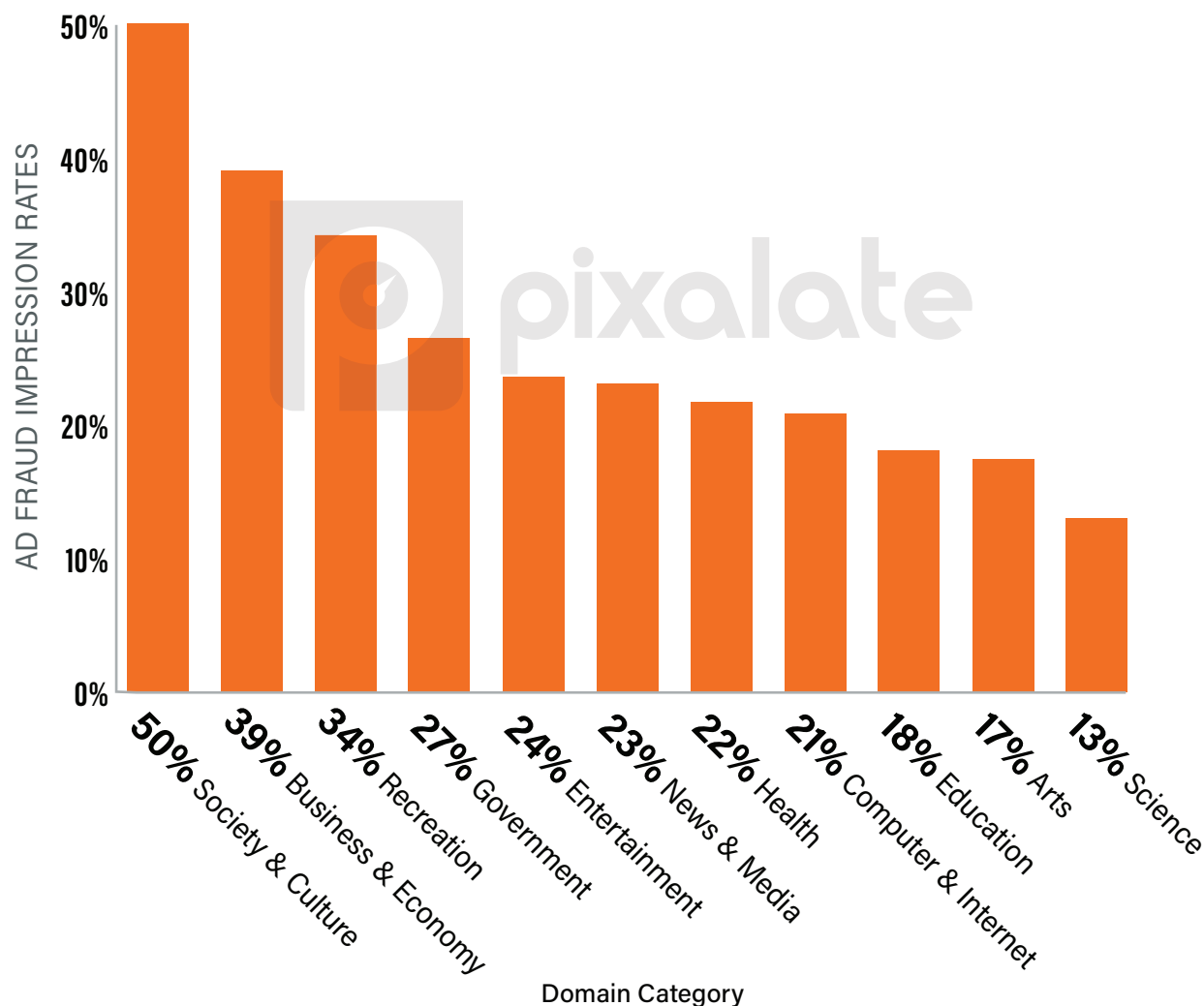
- The 320x50 ad unit was fraudulent 37% of the time within smartphone apps in Q1 2017.
- The 320x250 smartphone web unit was fraudulent 5% of the time.
- The 320x50 mobile web ad unit had an ad fraud rate of 4%.

Source: Pixalate data research, global. Data inclusive of ad impressions available for programmatic purchase, Q1 2017.



DISPLAY: AD FRAUD RATE BY DOMAIN CATEGORY

PROGRAMMATIC AD FRAUD RATES BY DOMAIN CATEGORY



Source: Pixalate data research, global. Data shows programmatic ad fraud rates by Yahoo-defined publisher verticals, Q1 2017.

According to our research, fraudsters are much more active in certain domain categories compared to others. Some key findings:

- Just over half (50%) of programmatic ad impressions in the “Society & Culture” domain category were fraudulent.
- The Business & Economy vertical is also hit hard by fraudsters, with a 39% ad fraud rate.
- Programmatic ads within the Government vertical were fraudulent 27% of the time.
- The Education (18%), Arts (17%), and Science (13%) verticals had the lowest ad fraud rates.

As publishers and marketers strike more programmatic deals, the potential impact a vertical has on ad fraud should not be overlooked.



THANK YOU

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METHODOLOGY Pixalate's team of data scientists analyzed over 100 billion ad impressions throughout Q1 2017 utilizing proprietary analytics tools to compile this research. The data was aggregated based on unfiltered sold impressions throughout the programmatic ecosystem. Devices were detected based on user agent provided in the bid stream that were then categorized by using the wurfl device detection system.

DISCLAIMER The research and insights contained within this report represent Pixalate's data and opinions as it pertains to the information Pixalate believes will be most relevant to the digital advertising industry's battle against ad fraud. The data has not been audited or reviewed by a third party, but the research and insights are grounded in Pixalate's proprietary technology and analytics, which Pixalate is continuously evaluating and updating.