

# ON THE EFFECTIVENESS OF VIDEO ADS: A MEASUREMENT STUDY

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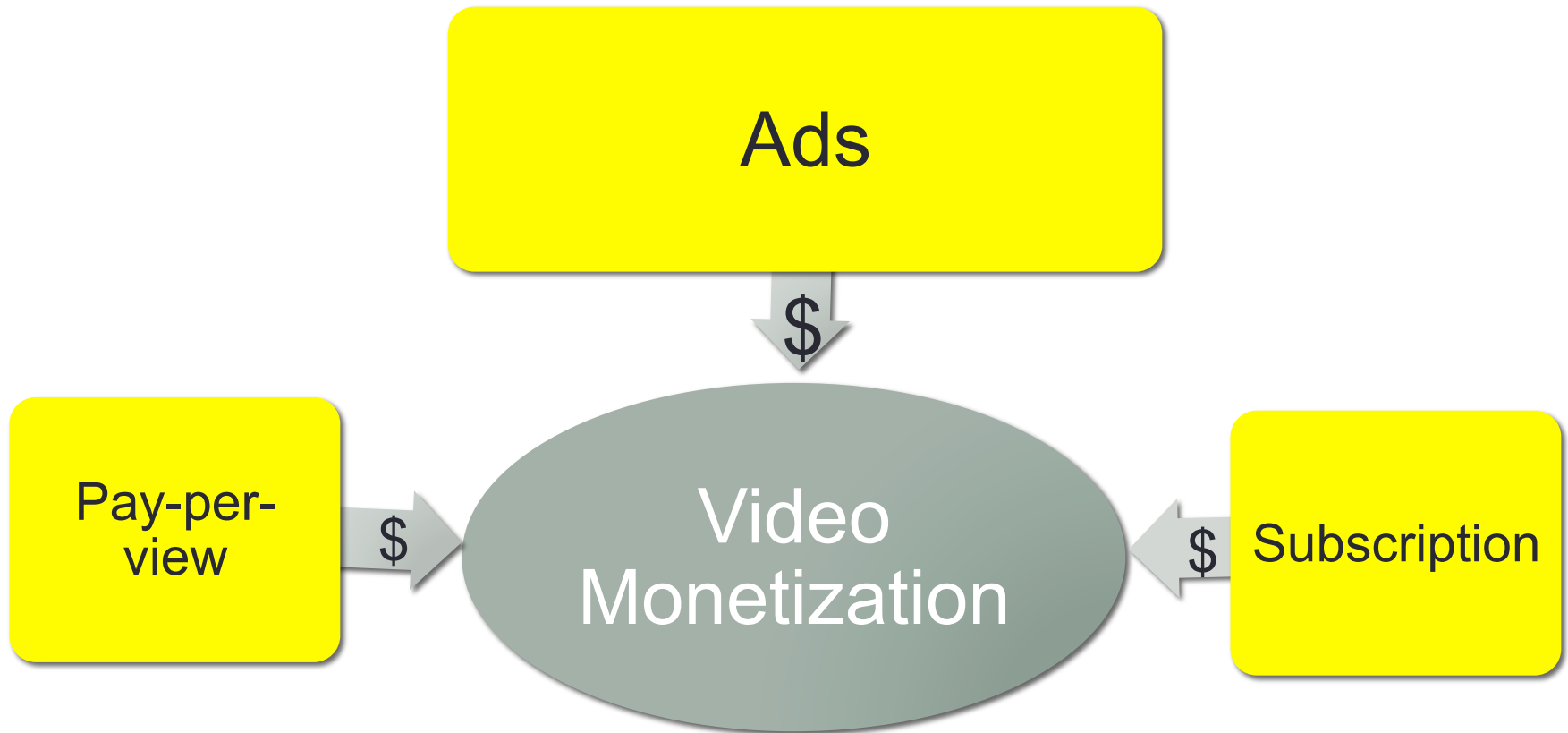
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# Why Study Video Ads?



Ads: A primary way for monetizing video content.

Our goal: Scientific understanding of how effective ads are and how video viewers engage with ads.

# How we measure ad effectiveness?



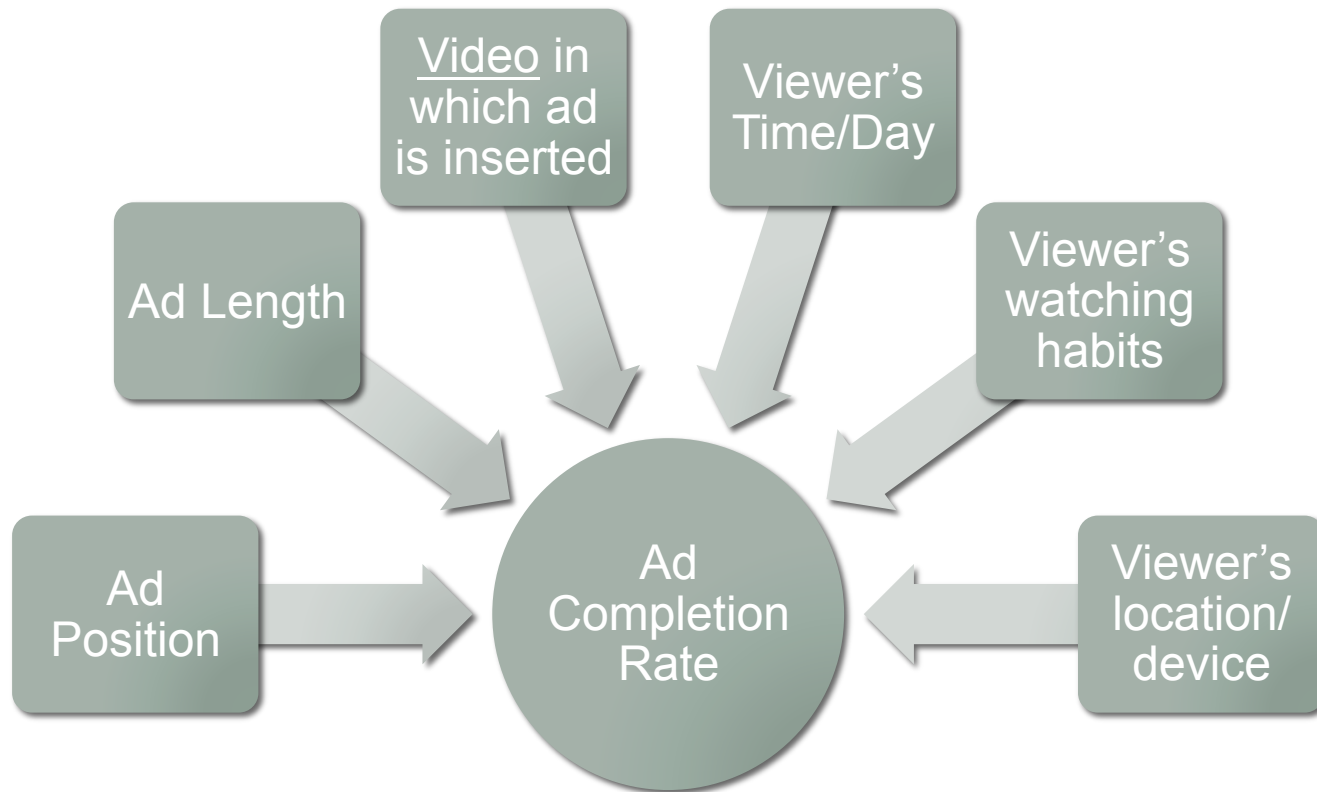
Ad Completion Rate = Percent of ads watched to completion by the user *without* abandoning in the middle.

Simple, widely-used metric based on the tenet...

“You have to watch the message to get the message...”

Caveat: Metrics for ad effectiveness other than completions exist but not studied here.

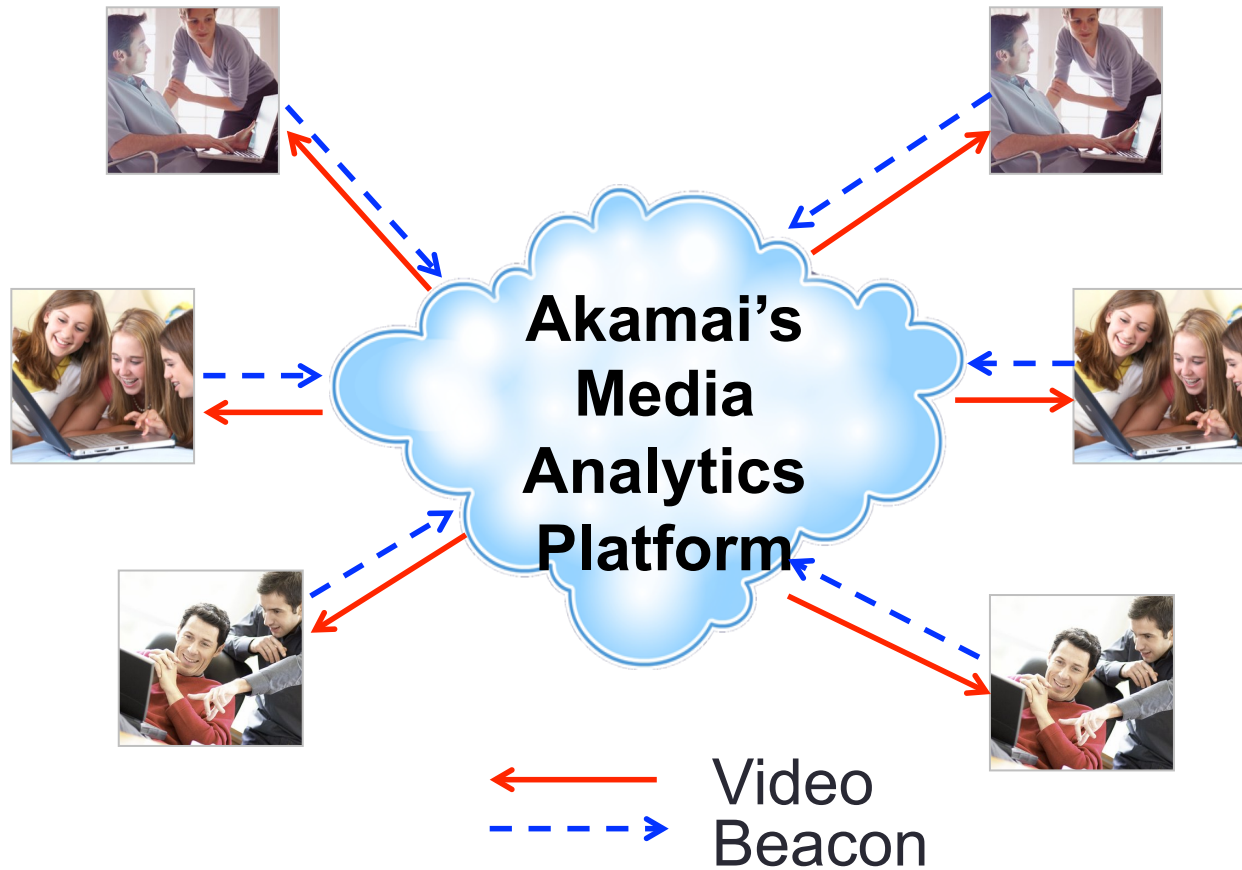
# Some factors that *could* impact an ad's effectiveness



To study the impact of one factor in isolation and control for other confounding factors, we use a novel technique from the social sciences called quasi-experimental design.

# Our Data

# Data Collection



Globally-deployed Akamai plugin that runs inside the media player and reports anonymized video and ad metrics via ``beacons'' from millions of actual end-users around the world.

# Data Characteristics

One of the largest *scientific* studies of video ads.

We analyzed data from users in all continents who watched videos and ads over 15 days in April 2013.

- 65 million unique users
- 33 video providers and ~3000 publishers
- 367 million video views and 257 million ad views
- 75 million minutes of ads in 777 million minutes of videos
- All major video genres (news, sports, entertainment, movies, TV episodes, etc)

# Our Findings

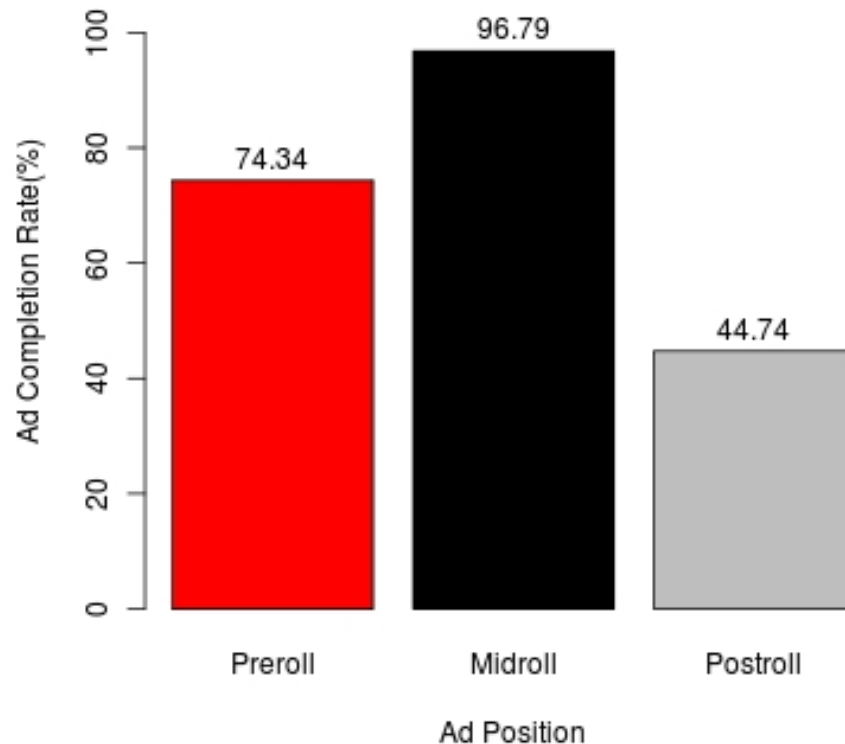


## True or False:

Viewers are more likely to complete an ad inserted in the *middle* of a video when they are presumably more engaged with the content, than when the ad is inserted in the *beginning* or the *end*.

# True.

Of all other factors, ad position had the single largest impact on completion rate. Midrolls had higher completions than pre-rolls or post-rolls.



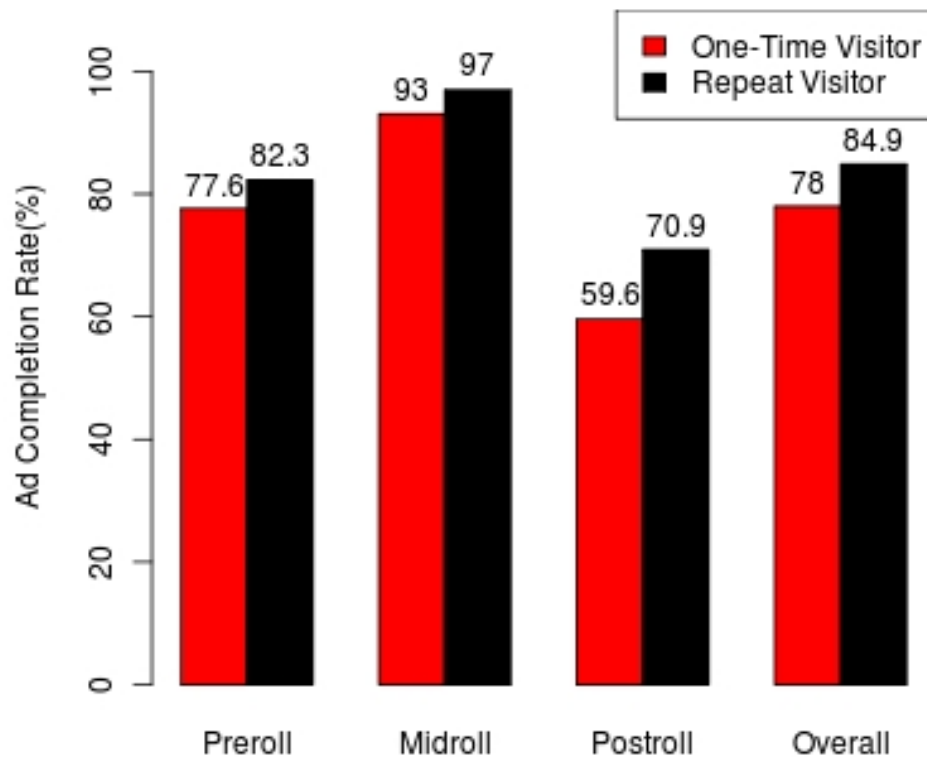
More importantly, the trend held up even after controlling for other confounding factors such as ad length and the video itself where the ad was inserted.

## True or False:

Viewers who repeatedly come to a site are more likely to complete ads since they are (presumably) more interested in that site's video content.

# True.

Repeat visitors to a site had a higher ad completion rates than one-time<sup>1</sup> visitors in every ad category.



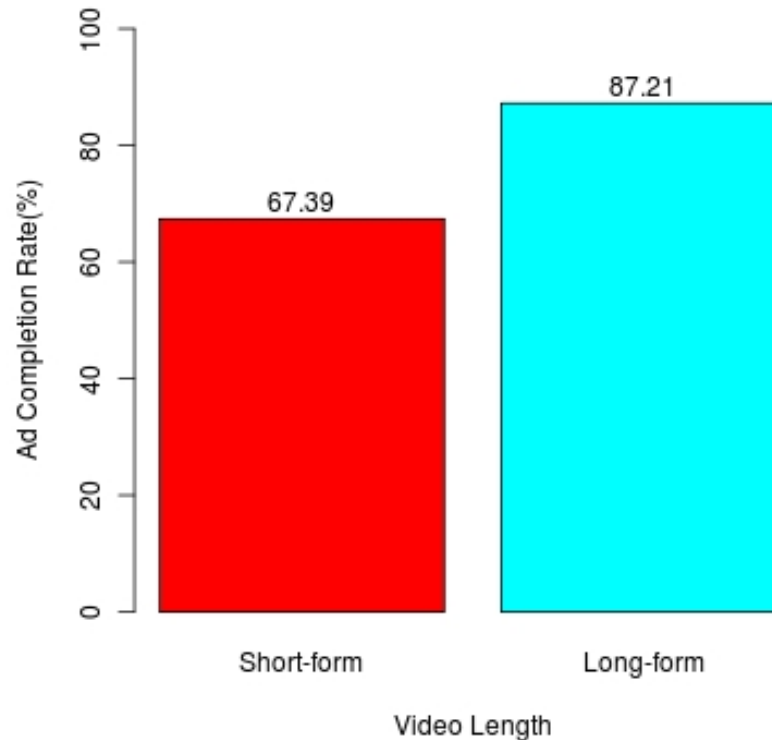
<sup>1</sup>A one-time visitors made exactly one visit to a site to play videos but never returned to the same site again in our 15-day period of measurement.

## True or False:

Viewers are more likely to complete an ad inserted into a longer video such as a movie than a shorter video such as a news clip, since they likely perceive longer videos as more worth waiting for.

# True.

Ads inserted into long-form video had significantly higher completion rate than ads in short-form video.



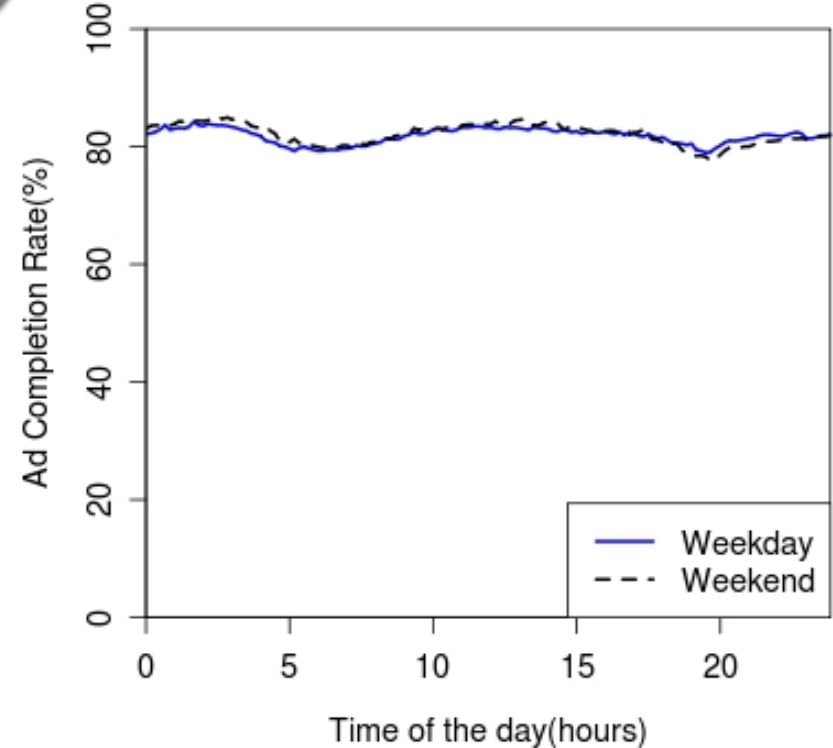
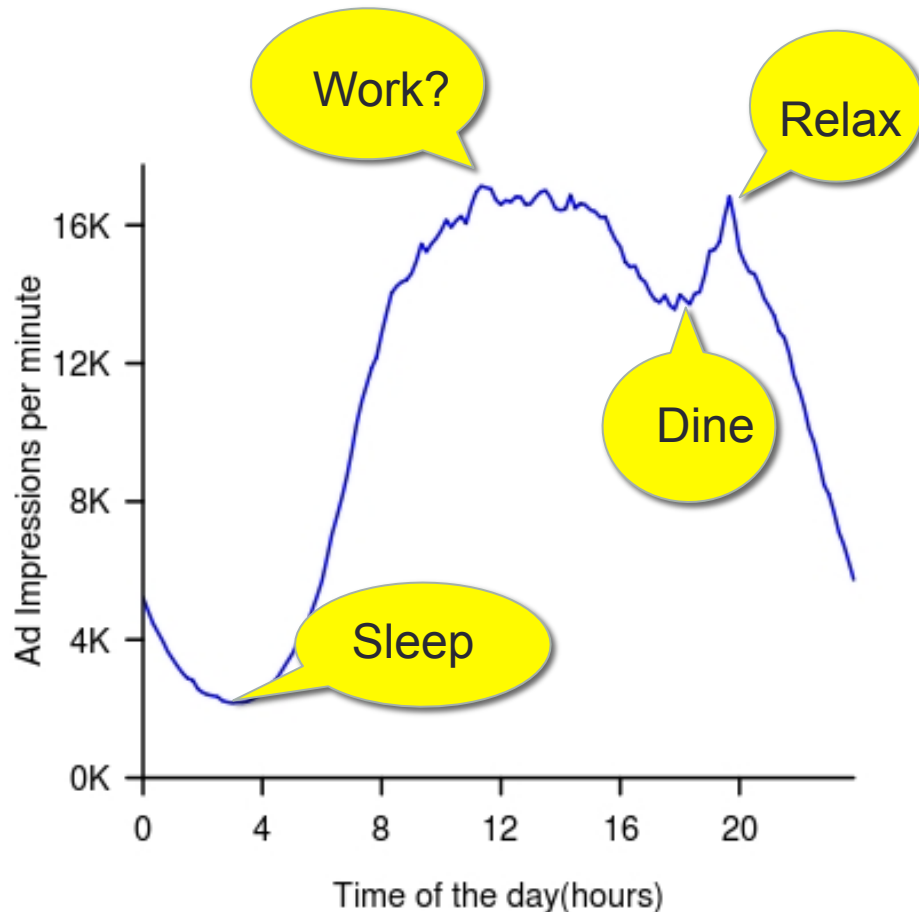
But, after controlling for other factors such as ad position (e.g., longer videos are more likely to have mid-rolls), the impact of video length in isolation was smaller (~4% rather than the original 20% difference in completion rate between long and short).

## True or False:

Viewers are significantly more likely to complete an ad during evening hours or the weekend when they are more relaxed than during busy work hours.

# False.

We saw small but not significant variations in ad completion rates due to the viewer's time-of-day or weekday/weekend.





## True or False:

Viewers are more likely to complete a shorter ad than a longer one, presumably since they run out of patience over time and abandon.

# True.

In a controlled quasi-experiment, we compared two similar viewers<sup>1</sup> watching the same video but two different ads of different lengths inserted into in the same position within the video.

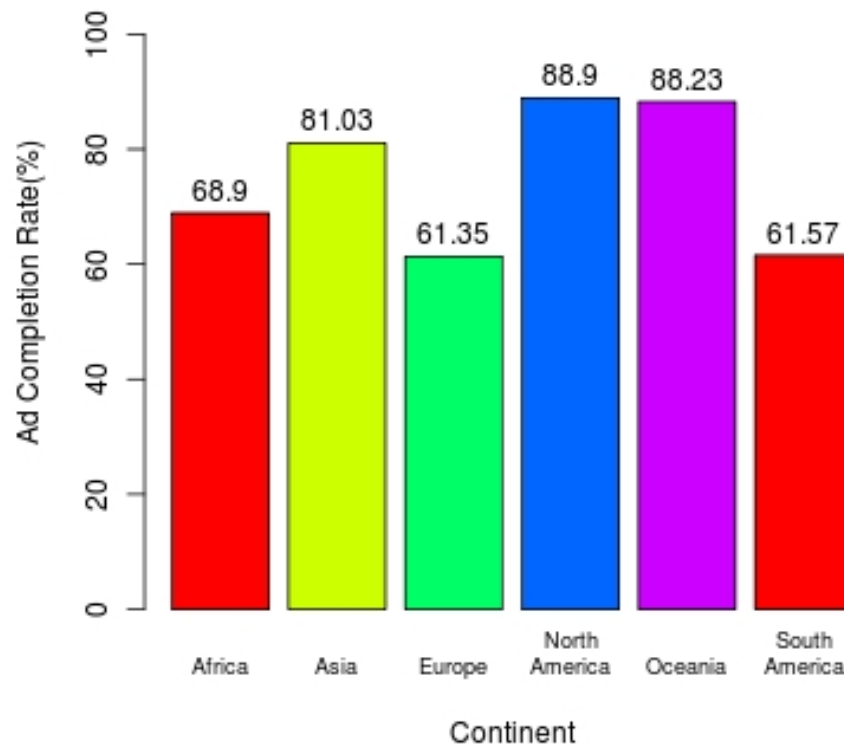
The viewer who watched the shorter ad completed more often<sup>2</sup> than the similar viewer who watched the longer ad!

<sup>1</sup>Similar viewers live in the same geography and are watching on devices with similar connectivity. About 160,000 random pairs of similar viewers were used in the quasi-experiment.

<sup>2</sup>Difference in completion rate of 15-second ads and 20-second ads was 3%.  
Difference between 20-second ad and 30-second ad was 4%

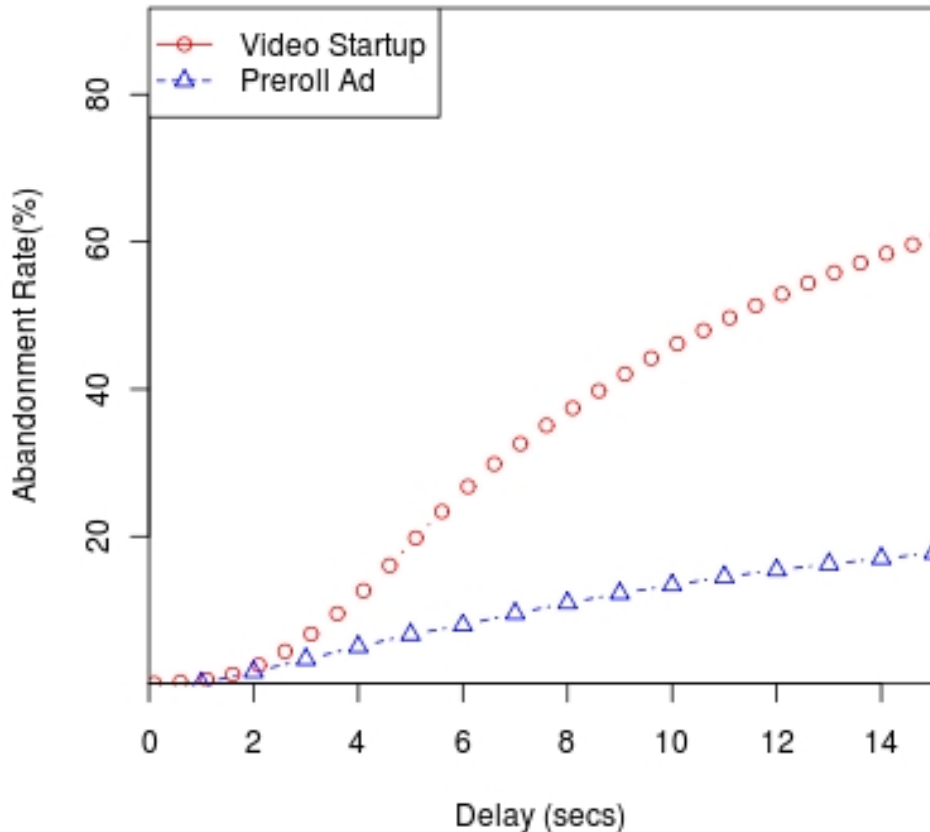
# Ad Completion Rate in Different Continents

North America had the highest ad completion rates and Europe the least.



# Abandonment Behavior:

## Viewers are more patient with ads than with performance issues

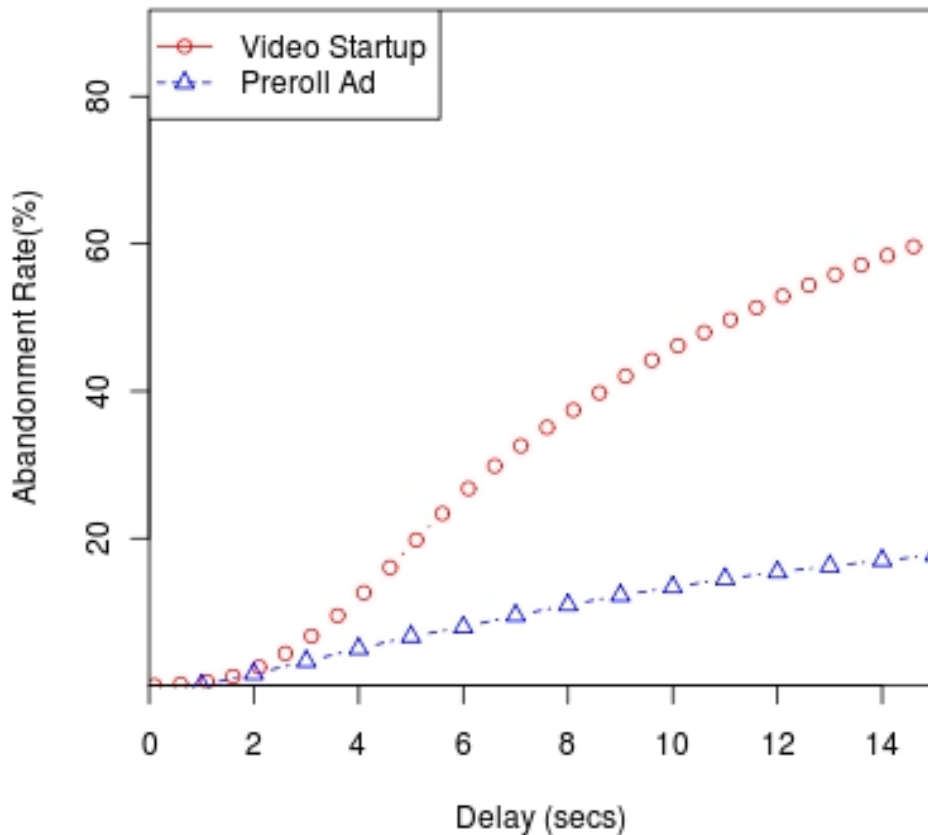


Two groups of users: One set waiting for a video to startup since the video is still buffering. The other is watching a pre-roll ad while waiting for the video to begin.

First group abandoned more than three times faster than second group.

By the 10-second mark: More than 45% of viewers have abandoned a slow-loading video. Only 13% have abandoned the pre-roll ad.

## Viewers are more patient with ads than with performance issues



Reason: Viewer psychology

Startup delays: Unexpected waits with no clear end in sight, leading to more frustration.

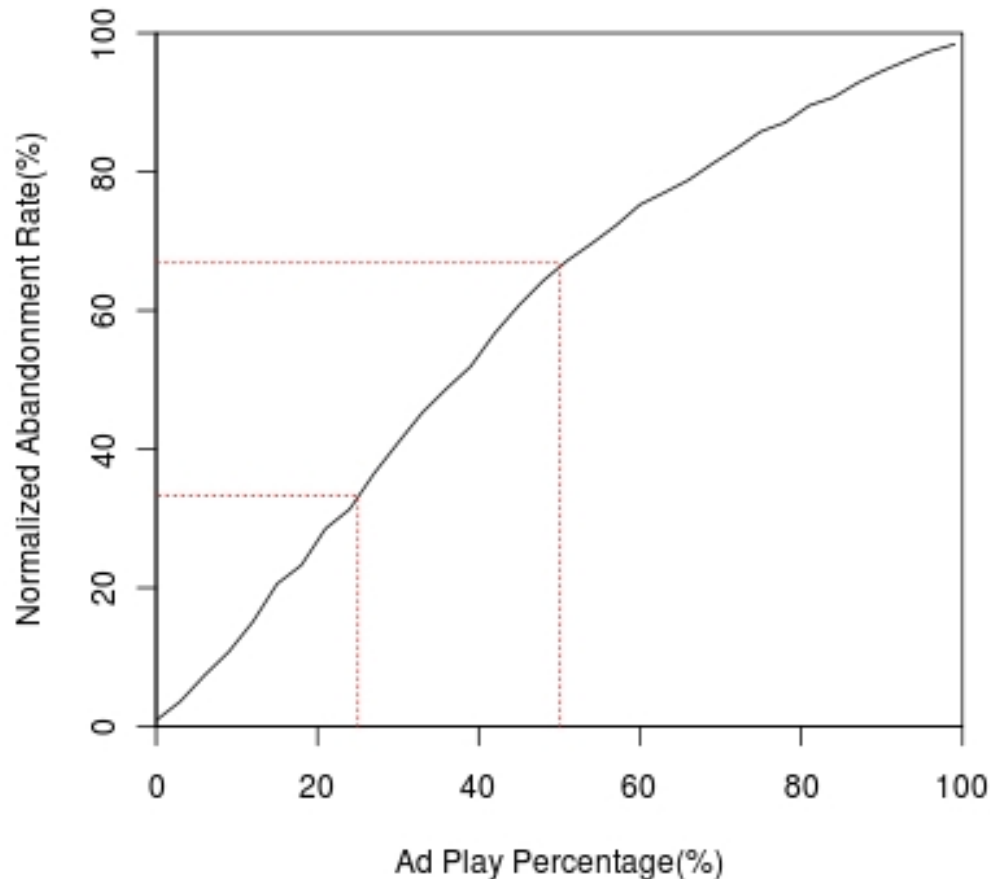
Ad delays: Viewers accept ads as an implicit form of payment for the content. So, the wait for an ad to complete is as expected and the wait is of a predictable duration. So less frustration.

Now, focusing only on the population of abandoners....

The abandoners abandon at a faster rate in the earlier portion of the ad.

About 1/3<sup>rd</sup> abandon before the quarter-way mark in the ad

About 2/3<sup>rd</sup> abandon before the half-way mark in the ad





For more information, see:

**Understanding the Effectiveness of Video Ads: A Measurement Study**, S.Shunmuga Krishnan and Ramesh Sitaraman, in the Proceedings of the ACM Internet Measurement Conference (IMC), Oct 2013.

[http://people.cs.umass.edu/~ramesh/Site/PUBLICATIONS\\_files/VideoAdsFullPaper.pdf](http://people.cs.umass.edu/~ramesh/Site/PUBLICATIONS_files/VideoAdsFullPaper.pdf)