

In-article and in-gallery ads survey

Measuring ad-blocking users' perceptions
of ads placed in primary content

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Abstract

The Acceptable Ads Standard ensures that ads do not negatively impact the users' web experience. In order to suggest any changes to the Standard, the Acceptable Ads Committee (AAC) is required to base the request on data reflecting users' perceptions of new types of ads, or evolving perceptions of existing types of ads.

In this study, the sentiment of ad-blocking and ad-filtering users towards websites with in-content ads was investigated. This was then compared with their attitudes towards websites containing other advertising formats and websites free of advertising. Formats tested included advertising formats that comply with the Acceptable Ads Standard, as well as animated and different in-content advertisements that appear between paragraphs or within an image gallery.

The multi-ads survey was distributed to 9,076 ad-blocking participants from the US, Germany and France. Results show a clear negative impact on users' perceptions of in-content advertisements larger than 840x150 within articles, advertisements placed in the middle of an image gallery slide show, or animated advertisements.

In-content advertisements smaller than 840x150 or advertisements placed at the end of an image gallery slide show do not perform equally well as the existing Standard. However, they still meet the necessary data requirements to be considered for the Acceptable Ads Standard.

One advertisement format was identified as an edge case: while an ad placed between paragraphs (static) with a dimension of 300x250 meets the basic requirements to be included in the Standard, further analysis demonstrates that users find this specific format to be as bad as other unapproved ad formats.

In addition, this study demonstrated that websites using Acceptable Ads performed as well as websites without any advertisements when it comes to users' perceptions.

Along with examining ad-blocking users' perceptions and the potential acceptance of ads placed in their primary content flow, the study further investigated the participants' awareness of the Acceptable Ads concept and their general attitude towards it. While awareness about the notion itself varies, upon explanation of what Acceptable Ads is many users indicate a positive attitude toward it. The data also shows that users who knew about the concept before tended to have a more positive sentiment toward it.

1. Introduction

This study was commissioned by the Acceptable Ads Committee (AAC). The AAC is an independent non-profit organization that sets the criteria which defines what ad formats are suitable to show to Acceptable Ads users. The AAC gives equal representation and voting power to members representing the digital advertising industry and members representing internet users. This includes stakeholders such as the world's leading digital ads companies, as well as digital rights organizations, think tanks, universities and everyday users of ad-blocking or ad-filtering technologies. Akin to institutions such as the Interactive Advertising Bureau (IAB), Media Rating Council, Coalition for Better Ads, and other industry bodies, the AAC is one of the few organizations setting ad standards online. Whilst the AAC sets standards for the ad-blocking audience, other industry bodies such as the Coalition for Better Ads (CBA) or the Interactive Advertising Bureau (IAB) are tailored toward improving the advertising experience for the non-ad-blocking audience.

The introduction of the Acceptable Ads Standard back in 2011 came with a [placement criterion](#) provisioning "*Ads should not disrupt the natural reading flow. They should be placed above, beside or below the primary content*". Such placements were categorically assumed off limits due to their potential for disrupting a user's experience. Therefore, a rather conservative approach was taken at the time to protect the users' experience. However, there has never been dedicated research to explore whether ad-blocking users mind the placement of ads in articles.

This study aims at examining the effect of in-content ad placements on ad-blocking users and their sentiments regarding the ads themselves as well as toward the total website experience.

2. Literature Review

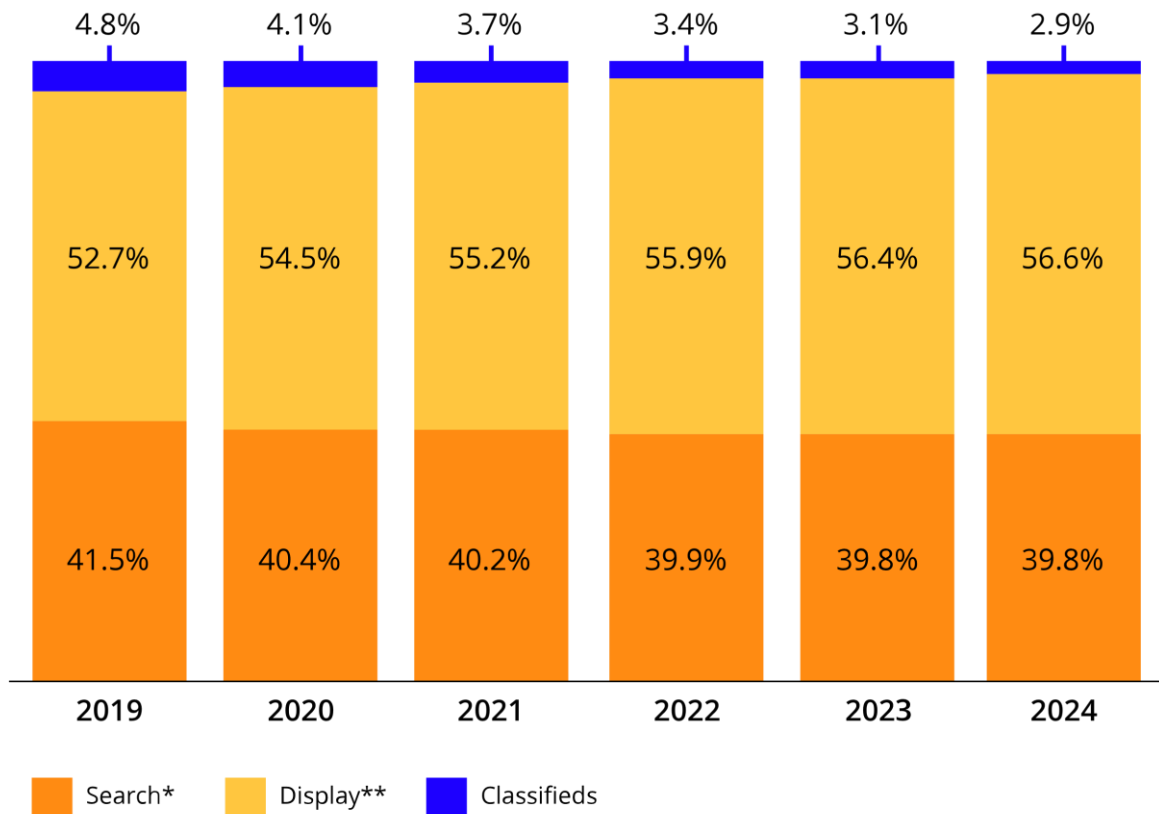
2.1. Role of in-content advertisement in the advertising industry

Not much research has been dedicated to identifying the significance or impact of in-article advertising to the online advertising industry. To our knowledge, there is a lack of academic studies, industry papers or institutions' statics to be found regarding the presence of ads placed in the middle of articles or web content, even though Figure 1 clearly illustrates that display ads in general constitute a significant category of digital ad spending. However, understanding the share of display ads that are positioned in articles remains difficult.

Yet, users frequently encounter ads that are positioned in the middle of their article reading flow. A recent examination (October 2021) of the top 1000 global Tranco domains demonstrated that 10% of the websites deliver ads in the middle of their article. Like Alexa or SimilarWeb, Tranco provides a ranking of the most popular websites. Despite Alexa and some other commonly known rankings being more known to the public, the Tranco ranking was chosen because it is less volatile in its positioning, hardened against manipulation and therefore better suited for research ([Tranco, 2021](#)). Adding to the results stated above, it makes sense to consider that not all websites in the Tranco ranking present relevant editorial website contexts that would be eligible for such in-article ad placements. Reducing the variety of websites in the Tranco ranking by removing company homepages, governmental websites, university homepages, etc., and only taking into consideration pages with classical editorial contents for end users, this figure rises to more than 57%. Thus, these ad placements are used on every second publisher

domain which implies a substantial significance of this specific ad positioning for the online advertising industry.

Figure 1: Digital ad spending share worldwide by format (in % of total)



Note: numbers may not add up to 100% due to rounding; includes advertising that appears on desktop and laptop computers as well as mobile phone, tablets and other internet-connected devices for all formats mentioned; *paid listings, contextual text links and paid inclusion; **banners (static display), rich media, sponsorships, video (including advertising that appears before during or after digital video content in a video player)

Source: eMarketer, March 2021

Furthermore, this is also in line with the industry’s top seller, Google, who state in their “General ad placement” recommendations: “Place ads in line with the main content or in content-rich areas of the site. When you choose ad placements it’s important to consider the user experience. Avoid placing ads in areas with little or no unique content or overloading certain areas of the site with too many ads.” ([Google, 2021](#)).

Lastly, some further research was conducted with online advertising industry companies who confirmed the attractiveness of the ad position. According to them, in-content ads belong to the best performing ad units due to their high viewability. Other companies

could confirm that specific ad formats placed in- content have on average an even higher Cost-per-1000-Impressions (CPM) compared with the exact same format placed outside of the content.

Considering the scope and significance, but with the little existing research in this space, this study attempts to help close the gap by investigating the extent that those ad positions may be accepted by ad-blocking users.

2.2. Role of display advertisement for users

Many factors influence the ability of digital ads to engage consumers (e.g., Spalding et al., 2009). One of these factors is the ad's placement. Research in the field of online advertisement has yielded a long list of the effects different ad positions have, suggesting that the effect of extending the Acceptable Ads portfolio with in-content ads is complex. For example, (John & Sathiyaseelan, Anuradha, 2014) tested the effect of four different ad positions on implicit and explicit memory. They found that the top position of ads was most effective, and the right position was least effective in terms of explicit memory, but no significant difference was observed in terms of implicit memory. One of the main reasons may be goal hindrance, leading to ignorance. These findings are in line with Janiszewski (1993) and Goodrich (2011) who state that the position of banner ads on webpages has been shown to affect memory - whether advertisements are placed to the right or left of the text makes a difference to attention and later memory of the ads – right ads seem to be ignored.

This finding, however, is contrary to the findings of Simola et al. (2013). Their data show that the ads were attended to more intently and recognized more accurately when they are presented to the right of the text. A possible explanation for why the present results go against previous studies (Janiszewski, 1993; Ahn et al., 2007; John & Sathiyaseelan, 2014) is the nature of the reading task used in the study. The findings are likely to result from the fact that the region of effective vision (i.e., the perceptual span) is biased toward the right for Western readers (see Rayner, 1998). When the participants reached the

rightmost column of the text presented on the left, because of their reading direction, it was possibly easier for them to move their eyes to the ad on the right (see Simola et al., 2013). In addition, Simola et al. (2013) show with eye-tracking that ad pictorials and editorial headlines were recognized better, especially when the ad was presented on the right side of the page.

Further, the positioning of an ad does not only affect the website user's ability to remember the ad's content but also interferes with the attention and memory of the website's content. The same ad can, thus, have different effects depending upon the context in which the ad appears, because the surrounding materials have been shown to affect the processing of the ad message (Calder et al 2009; Dahlén, 2005; Moorman et al., 2002; Norris & Colman, 1992; Shen & Chen, 2007).

With regards to placing ads inside the primary content of a website, Chen & Lin (2013) showed that positioning an ad in the middle of a website's content leads to the highest estimated click-through rate. Further, Mongkolnavin et al. (2020) proved that the ad's position has an impact on the ads' time to first fixation, first fixation duration, total fixation duration and fixation count: it takes significantly longer for people to take a first look at the banner ad at the top position of a website, and a shorter time for people to take a first look at the banner ad in the right position. Considering the number of times people look at them (fixation count) as well as total time spent looking at them (total fixation duration), the banner ad at the top position gained more attention from participants than the banner ads placed in other positions. This is especially interesting for in-content ads, which are in general positioned in the middle of the website and are "converted" when the user scrolls to a top positioned ad.

Overall, these studies clearly demonstrate that the positioning of an ad has a direct effect on the user's perception of the ad and the website. Therefore, there is a risk that as a website viewer generates attentional inertia and becomes highly engaged with the content of a webpage, cognitive processing is intensified and an ad is perceived with higher intrusiveness (see Huang & Chen, 2017). Huang and Chen (2017) could also show

that website viewers' cognitive engagement with website content is positively related to perceived ad intrusiveness. Text-based and interesting content especially led to more cognitive engagement and increased the intrusiveness of an advertisement. Intrusiveness is the psychological consequence that occurs when an audience's cognitive processes are interrupted (see Edwards et al., 2002). In that line, Goldstein et al. (2014) calculated the economic and cognitive costs of annoying display advertisement. They conclude that in plausible scenarios, the practice of running annoying ads can cost more money than it earns, as they also signal that a publisher is desperate for business, therefore reducing trust in the content's quality.

As in-content ads are visually way more prominent than out-of-content ads, they have a higher potential of being perceived as annoying and intrusive. Riedel et al. (2018) stress that the main drivers of advertising intrusiveness are temporal disruption, visual disruption, and flow disruption. Flow and visual disruption are, by design, activated when in-content ads are present. Consequently, this ad format is prone to be perceived as distracting, obtrusive and interruptive. However, Riedel's et al. (2018) framework provides an understanding of the advertising characteristics that consumers find intrusive and thus can be used to design advertisements that might be perceived as less invasive by consumers to minimize negative responses. Therefore, the hypothesis is that in-content advertisement might be acceptable only if their interference with the user's main task is minimal and their appearance is expected (see Cho & Cheon, 2004). This could be achieved with static (see also Burke et al. (2005) for the benefits of static ads), small to medium-sized ads that reduce the cognitive load of processing those ads and freeing up resources for consuming the website's primary content (see Yan et al., 2020).

3. Study and survey design

Data was acquired by collecting a series of completed questions from representatives of the online consumer population. Respondents had to be ad-blocking or ad-filtering users

older than 16 years old. Responses were collected through self-completed online questionnaires on their desktop computers.

The study's design closely resembled the preceding 'Video-ads AAC study (Acceptable Ads Committee 2020) to establish a consistent way of assessing the approval of different ad formats. In line with the previous study, this study also uses a multi-factorial approach to measure how online advertising is perceived. Besides measuring disruptiveness, the survey tests for intrusiveness, annoyance, and enjoyment of the advertisement, as well as overall satisfaction with the website experience. Certain measures and words were also vetted by cross examining other research conducted in the advertising space by the CBA, IAB and Nielsen Norman Group (Coalition for Better Ads, 2020; Interactive Advertising Bureau, 2016; Nielson Norman Group, 2017).

Survey responses were collected via desktop devices. To ensure that the participants were ad-blocking or ad-filtering users, they first had to answer screening questions before being exposed to different mock-up websites which included the ad experiences.

In total there were two website types tested:

- a newspaper article and
- a layout with an image gallery that the users could navigate through

Each survey participant would be presented with two content variants of the same website type, which meant the setup of the website stayed the same, but the content differed. Only content such as articles would differ. Participants were first presented with an article, followed by a series of questions about the participant's satisfaction with the website and about his/her perceived disruptiveness, intrusiveness, annoyance and enjoyment in the event that an ad was shown.

Subsequently, participants were exposed to a different article, followed again by a series of questions. They were asked to compare these two advertisements regarding the obstructiveness to their experience.

All tested advertising formats can be found in the Appendix. The ad formats tested in this study were selected based on

- input from the Acceptable Ads Committee's representatives and
- primary research on which ad formats are most used by the globally highest-ranked Tranco publishers.

The survey also contains a no-ad experience and an Acceptable Ads experience. Both serve as a reference point to assess the relative performance of all other ad formats¹.

The survey concludes with final questions around the participant's ad-blocker usage, knowledge about and sentiment towards the Acceptable Ads Standard and their attitude toward online advertising in general based on Redondo & Aznar's questionnaire (2018).

The experiences were randomized in a way that each pair of advertisements reviewed by a participant would only vary in one dimension. The effect of brand or ad content within this study was purposefully limited, which was why two reasonably neutral, mock brands were used in the advertisements: Natural Juice Orange and Mason Coffee.

¹ The term "(ad) performance" within this report is used strictly in reference to the survey participants' ratings of an ad format on the metrics studied, i.e. disruption, intrusiveness, annoyance and enjoyment. It does not refer to the revenue performance of the ad format to a publisher, nor to the performance of the ad format from an advertiser's perspective, e.g. clickthrough, viewthrough, etc.

Once the survey was programmed, unmoderated usability tests were performed with six participants from different age groups. In addition, a pilot study with 206 participants and a small qualitative usability test were conducted to ensure the integrity of the data. As a result of these measures, the description of the tasks was further clarified before conducting a second pilot study and moving onto the full launch.

4. Participants Demographics

9,076 participants from the US, Germany and France were recruited. The US, Germany, and France were specifically chosen considering they are the top three biggest ad-blocking markets. The survey aimed for an equal gender distribution, which was achieved with a male-to-female ratio of 1.1. The overall age distribution mimics the age distribution of the internet-using population. The participants' demographics are summarized in Table 1.

Table 1: Participants' age-gender distribution

Gender/Age	16-24	25-34	35-44	45-54	55-64	65+	Total sum (over gender)
Male	761	1,251	941	745	570	470	4,738
Female	849	1,430	812	529	433	235	4,288
Other	18	10	3	3	1	1	36
Prefer not to say	5	3	2	2	1	1	14
Total sum (over age)	1,633	2,694	1,758	1,279	1,005	707	9,076

All participants use an ad-blocker. The distribution of the ad-blockers can be found in Figure 2. Participants are allowed to name more than one ad-blocker in the event that they use multiple ad-blockers at once.

Figure 2: Ad-blocker distribution across the participants

Shares lower than 1% are filtered out. Multiple selection is noted with a plus sign.

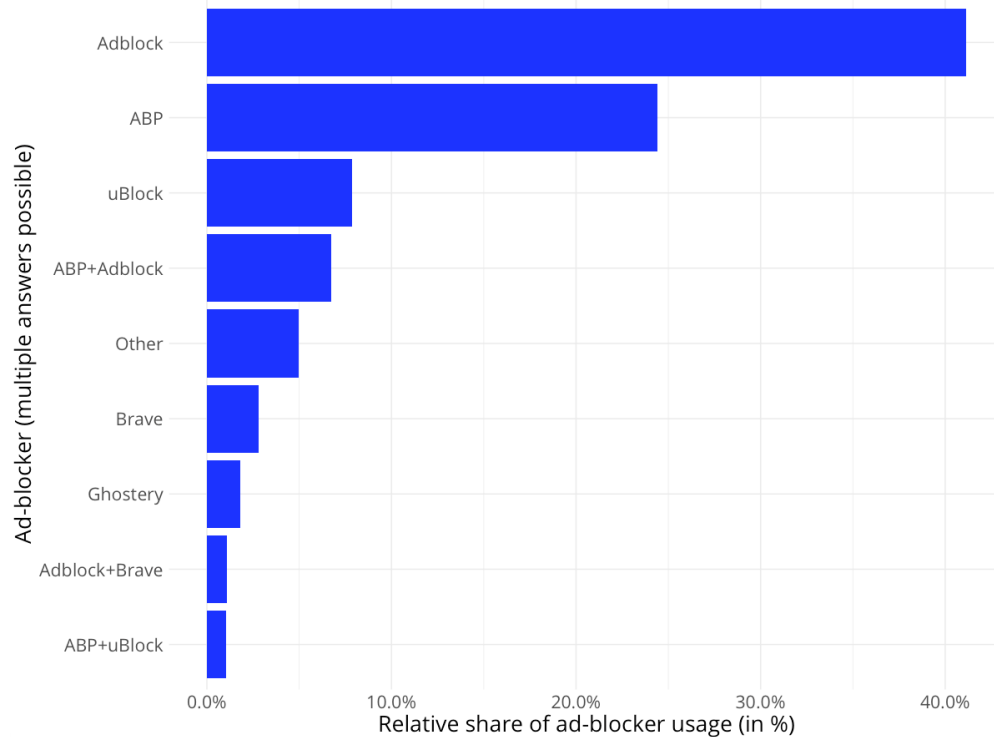


Figure 2 shows that most of the participants use Adblock (over 40%) followed by ABP (around 25%). Other adblockers play a minor role.

5. Advertisement and website rating scale

To determine each respondent's level of disruption, intrusiveness, annoyance and enjoyment towards different ad types, the survey utilized a five-point unipolar Likert scale for all individual ad ratings. For each different ad type, the respondents indicated their level of disruption/intrusiveness/annoyance/enjoyment by choosing any out of five positions. These were shown to the participants in text-format only. Additionally, participants also indicated their level of satisfaction with the website using a five-point bipolar Likert scale. The scales used are presented in Table 2.

Table 2: Rating scales for web experiences and towards the perception of the ad

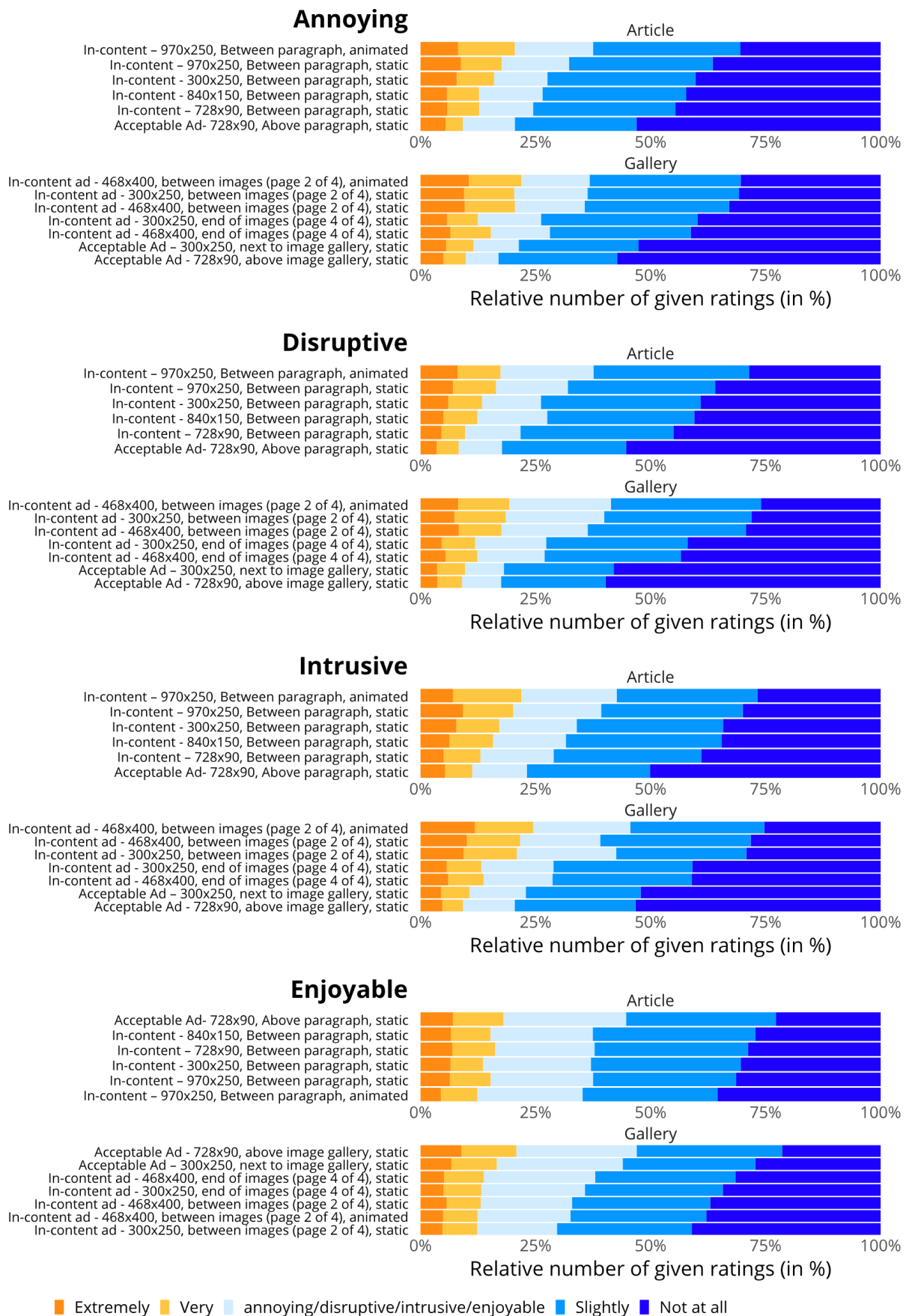
How disruptive was the ad to your experience?	How intrusive was the ad to your experience?	How enjoyable was the ad to your experience?	How annoying was the ad to your experience?	How satisfied were you with the overall experience of viewing this page?
Not at all disruptive	Not at all intrusive	Not at all enjoyable	Not at all annoying	Very Dissatisfied
Slightly disruptive	Slightly intrusive	Slightly enjoyable	Slightly annoying	Slightly Dissatisfied
Disruptive	Intrusive	Enjoyable	Annoying	Neutral
Very Disruptive	Very intrusive	Very enjoyable	Very annoying	Slightly Satisfied
Extremely Disruptive	Extremely intrusive	Extremely enjoyable	Extremely Annoying	Very Satisfied

6. Presentation of results

6.1. Individual ad ratings

The user took part in the survey by getting exposed to a series of diverse ads embedded in mock-up websites which they rate on various scales. Figure 3 presents these ratings and shows how disruptive, annoying, intrusive, and enjoyable the tested advertising formats were perceived.

Figure 3: Annoyance, disruptiveness, intrusiveness, and enjoyment of the different ad formats



In general, Acceptable Ad formats perform exceedingly well, on all the measured dimensions. The ad formats which were rated the most negatively across all experiences and dimensions were animated ads: both in the article as well as image gallery setting animations were mostly considered as *extremely* or *very* disruptive, annoying/intrusive and unenjoyable.

6. 2. Comparison ratings

Participants had to choose between the two web experiences they had previously seen and had to select the one which obstructed them most from viewing the content (see Questionnaire in the Appendix). While the ad-specific ratings analyzed in Chapter 4.2 only allow an analysis of web experiences that included an advertisement, this rating also shows how participants perceived the websites that did not include an advertisement. This analysis cannot be conducted within the individual ratings, because participants did not receive questions to rate the advertisement on the dimensions of disruptiveness, intrusiveness and annoyance where no advertisement was present. A Stephenson rating system was used to evaluate the performance of the ads in comparison. The results can be seen in Figure 4.

Acceptable Ad formats as well as the "no-ad" experience competed very closely when it came to evaluating how obstructed users feel when consuming the content. Out of all ads tested, the study finds that the Acceptable Ads formats again came closest to the no-ad experience for users. Findings also show that all other formats tested within this study rank worse than the Acceptable Ad formats tested within this study. There was also an investigation into a potential brand effect. However, no meaningful difference between the used mock brands could be found.

Figure 4: Stephenson rating system metric for each ad format

The figure presents as a confidence interval a two-deviation interval.



6.3. Impact of demographics on the ad's ratings

To better understand what influences the participant's rating of the ad's disruption/intrusiveness/annoyance/enjoyability, a logistic regression model was used to estimate how the ad type, the participant's age, origin and gender, as well as the general perception of online advertisement have influenced the ad's rating. The general perception of online advertisement is measured by a set of eleven questions based on Redondo and Aznar (2018). We used an exploratory factory analysis to calculate an individual participant's score that summarizes his/her answers to the eleven questions. The higher his/her score, the more he/she likes online advertisements.

For the ad's rating estimation, a binomial estimation was used. Stated differently, the model estimates the probability that a certain ad is rated to be

disruptive/annoying/intrusive or worse (or better in case of enjoyable). Furthermore, in terms of gender, only participants who stated female or male as their gender were selected. There were too few observations for other gender statements. Interestingly, the data also shows that there is a learning effect happening: participants detect ads more often in the second web experience. The effect was very notable for older participants. To account for this detection effect, a dummy variable called “Experience” was included. Table 3 summarizes the estimation results.

Table 3: Estimated odds-ratios from the logistic regression results for an ad being rated worse (better) or equal to disruptive/intrusive/annoying/ (enjoyable)

All models fulfill the Chi-squared goodness of fit test. The reference is a male US citizen between 16 and 24 years rating the ad for the first time. A predictor is significant if its confidence interval does not contain the 1. This significance is marked with an asterisk based on a 95% confidence interval. All models account for interactions effects between the participant’s total score, age, gender and origin.

Predictor	Disruptive	Intrusive	Annoyance	Enjoyability
Country: France	0.87*	1.01	0.76*	1.93*
Country: Germany	1.27*	1.10*	1.26*	1.08
Age: 25 - 34	0.82*	0.79*	0.84*	1.22*
Age: 35 - 44	0.87*	0.87*	0.87*	1.37*
Age: 45 - 54	0.40*	0.45*	0.38*	1.23*
Age: 55 - 64	0.30*	0.31*	0.29*	0.98
Age: 65+	0.29*	0.27*	0.26*	1.00
Gender: Female	0.92*	0.81*	0.83*	1.04
Total score of online advertisement attitude	0.82*	0.89*	0.70*	2.73*
Experience: 2nd	1.21*	1.11*	1.09*	0.85*

The following effects could be detected: results show that there is a significant generation effect -- older participants tend to rate each advertising format more positively. For example, the odds of an ad being rated as disruptive, very disruptive, or extremely disruptive is approximately 70% lower for a participant of the age 65+ compared to a participant between 16 and 24 years.

There is a learning effect: if an ad is rated in the second experience, the odds of it receiving a disruptive (or worse) rating is about 1.21 times higher compared to seeing the same ad in the first experience. Given the ad rating task that succeeded the first website experience, it is very likely the participants paid more attention to the ads the next time they were presented with the second web experience. The second time, they presumably already anticipated to be asked ad-related questions afterwards. Therefore, their focus could have been shifted from a "normal" website consumption towards spotting the ads.

The results also indicate that there is a gender effect for the three negative adjectives: female participants tend to generally rate ads more positively than male participants.

There is a country effect present in disruption, intrusive and annoyance ratings: participants from Germany compared to participants from the US tend to rate ads more negatively, while participants from France compared to US participants tend to rate ads more positively.

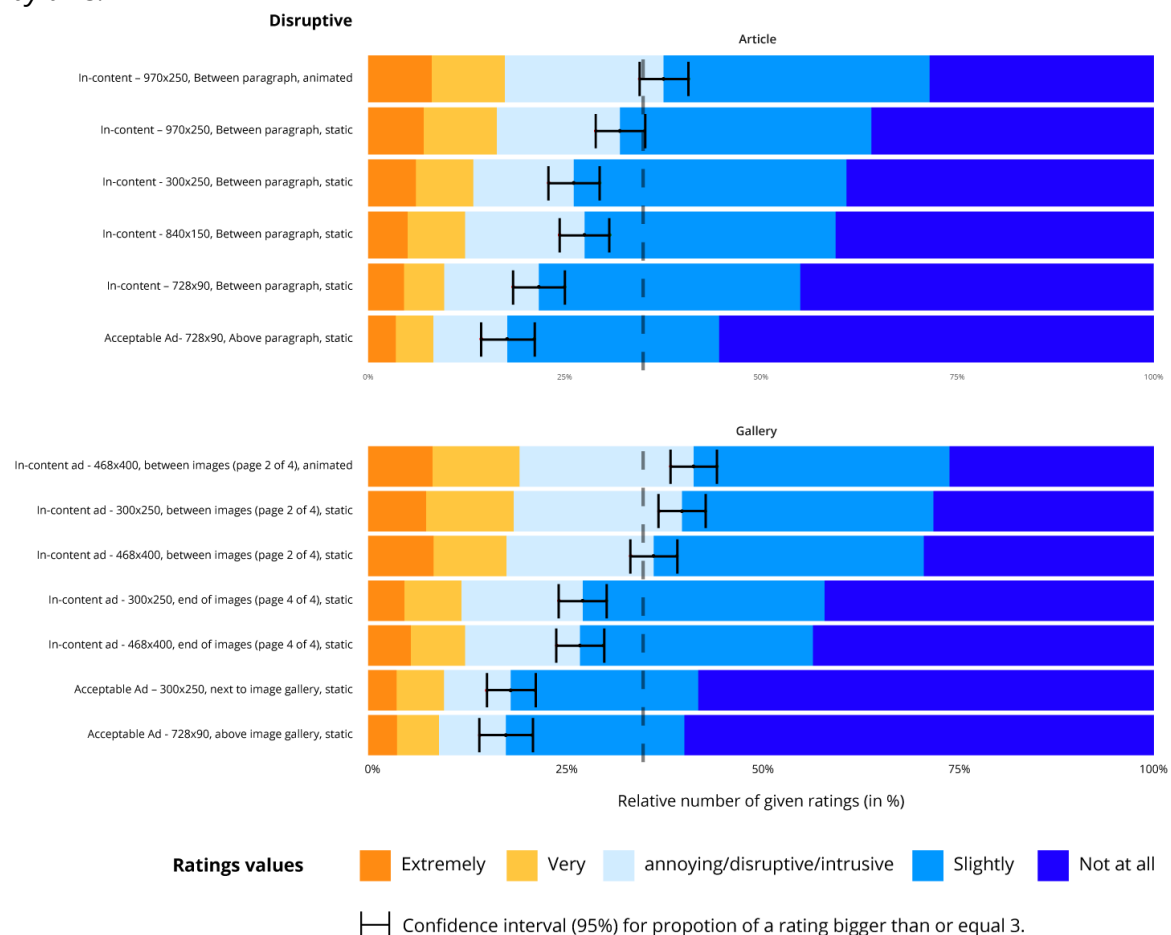
As Table 3 shows, a higher negative attitude towards online advertisement, in general, leads to a higher probability of a negative rating and a lower probability for a positive rating.

7. Further Analysis

To be able to determine the acceptability of an ad format, the Acceptable Ads Committee is required to determine the annoyance level of the tested ad format. Only if an advertisement format fulfills the requirement to “be equivalent to 35 on the ‘Level of Disruption scale” can an ad type be taken into consideration to be added to the Acceptable Ads Standard. The level of disruption is demonstrated in Figure 5 along with the 95% confidence interval for the ad being disruptive or worse.

Figure 5: Disruptive ratings for all tested ad formats

With the 95% confidence interval of the share of ads being disruptive, very disruptive, or extremely disruptive. The black dashed line indicates the 35%-threshold stated in the AAC bylaws.



The analysis demonstrates that five ad formats can be taken into further consideration:

For the **article** experience:

1. A static 300x250 in between two paragraphs
2. A static 840x150 in between two paragraphs.
3. A static 728x90 in between two paragraphs.

For the **image gallery** experience:

1. A static 300x250 at the end of the image gallery.
2. A static 468x400 at the end of the image gallery.

In early studies, the level of disruption functioned as an initial measure to create the Acceptable Ads Standard. The more research conducted, the more information available to further assess newly tested ad formats, with the existing criteria of the Standard being used as a valuable point of reference.

Hence, further analysis was conducted to move beyond the level of disruption threshold as defined in the bylaws. Following the video ads study methodology, the Acceptable Ads formats tested within the survey were used as a reference point to assess the relative perception of in-content advertisement formats. In addition, a metric was used which combined all results assessing users' sentiments towards an ad. Thus, instead of only looking at the disruptiveness of an ad, perceived intrusiveness, annoyance and enjoyment of a given advertisement are also considered.

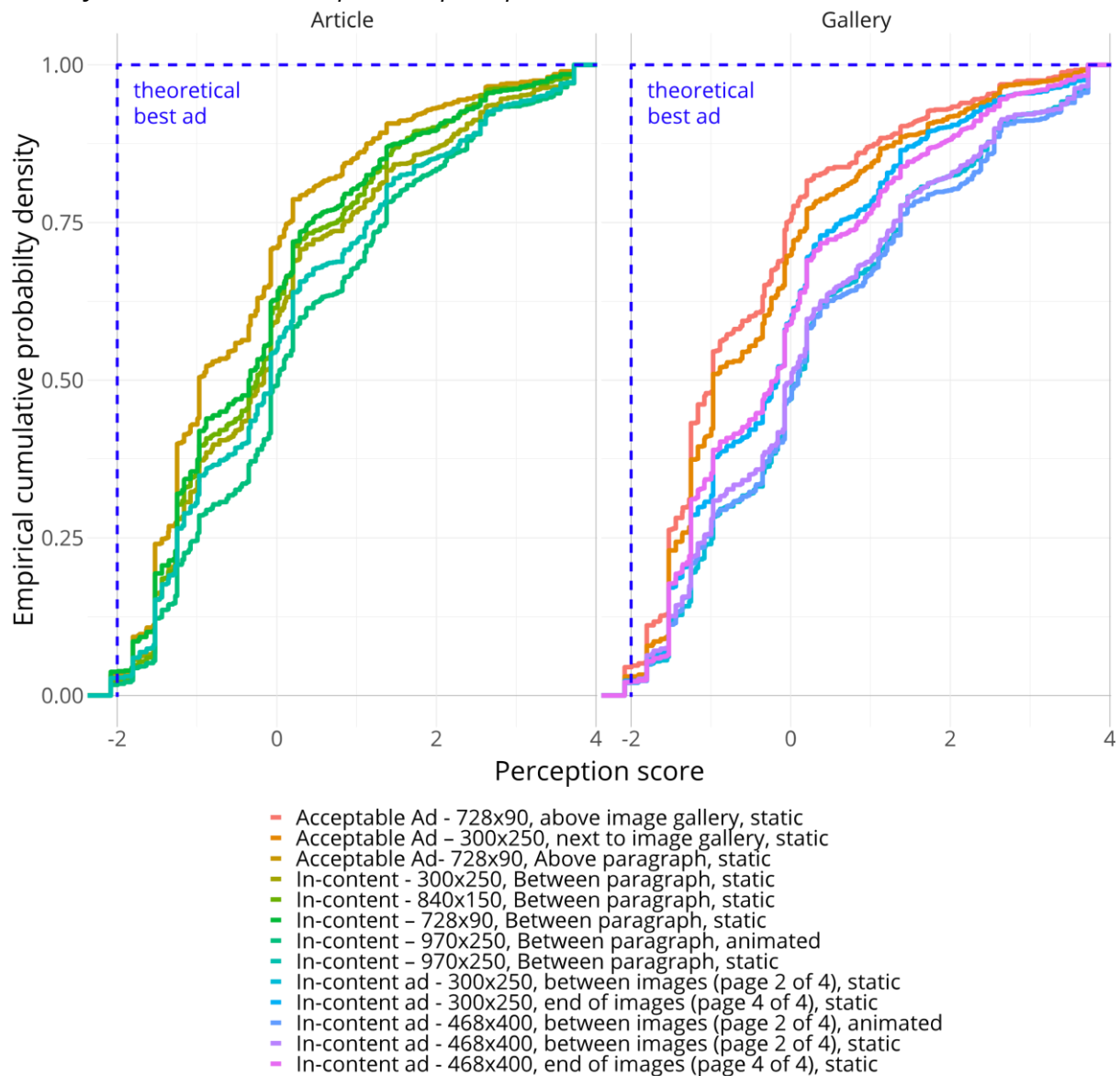
To transform all these dimensions into underlying factors and explore the latent dimensions that might be hidden in the observed variables, an Exploratory Factor Analysis (EFA) was conducted. The factor analysis was used to reduce the 4-dimensionality (disruptiveness, intrusiveness, annoyance and enjoyment) of survey questions to form a common score that measures the overall performance of each ad. Theoretically, consented ad formats tend to cause more positive feelings (vice versa in the case of "non-acceptable" ad types).

The factor analysis revealed that two factors can explain the four dimensions. One factor is highly linked to the negative measures (disruptiveness, intrusiveness and annoyance), while the other factors are connected to the positive metric (enjoyment). The total score measuring the ad's performance is then the sum of both factors, whereby the second factor is rescaled by the covariance between both factors. Thus, as both factors are negatively correlated, the lower the total score the better the ad has been rated overall.

The distribution of each total score can be plotted for each ad using an empirical cumulative density function (ECDF). As mentioned, the lower the total score, the better the ad performance. Thus, the more an ECDF leads to the left, the better the ad has been perceived by the participants. Figure 6 demonstrates the ECDFs per advertisement type.

Figure 6: ECDFs per advertisement type

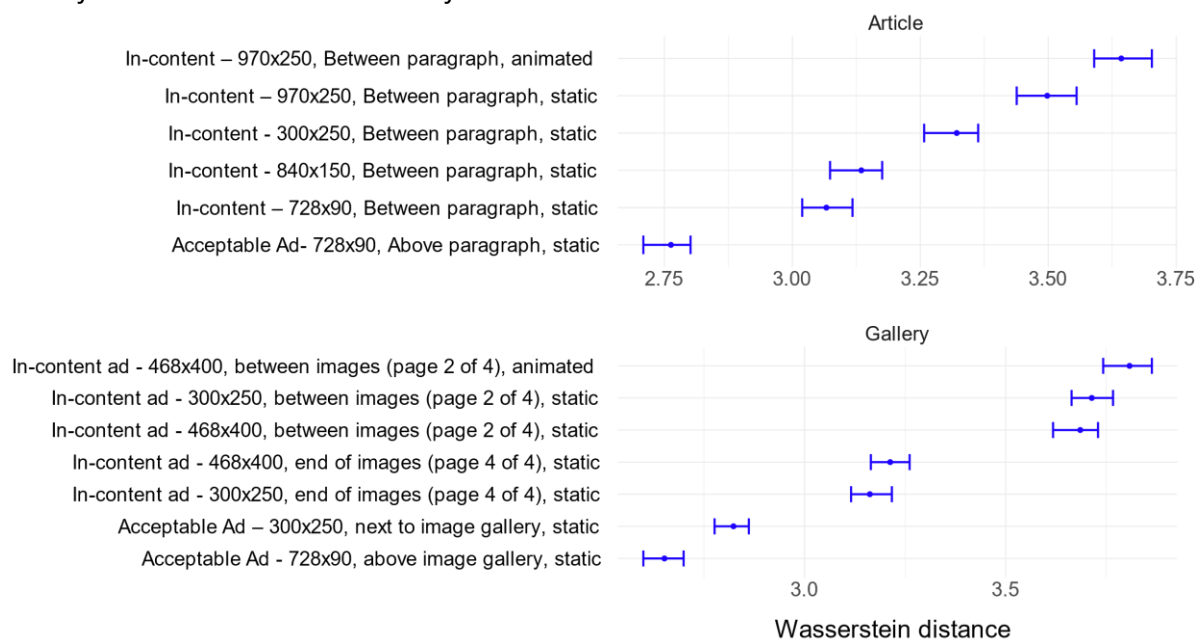
The theoretical best ad serves as a reference point. The theoretical best ad would be an ad format that gets the lowest possible negative and highest possible positive ratings and thereby achieves the lowest possible perception score.



To understand how different these ECDFs are, a Wasserstein metric was used to measure the distance between a given ad's score distribution and the score's distribution in the theoretical best case (= Γ -shape). The lower the distance between the ad and the theoretical best ad, the better the ad's performance. The theoretical best ad would be an ad format that gets the lowest possible negative and highest possible positive ratings. Figure 7 presents the Wasserstein distances of all tested ads.

Figure 7: Wasserstein distance metric for the ECDF between ad types and the theoretical best ad

The confidence interval is a 95% confidence interval.



In line with the results of the disruptiveness ratings, the ranking of how the advertisements perform stays the same: the Acceptable Ads formats perform best among all advertisements tested. No other ad formats have as small a distance as Acceptable Ads formats to the theoretical best ad, as none of their confidence intervals overlap with those of Acceptable Ads formats. This is caused by the fact that ads under the Acceptable Ads Standard perform outstandingly well on the annoyance, disruption, intrusion, and enjoyment level. All Acceptable Ads formats result in at least 50% of the participants saying the ad was “not annoying/disruptive/intrusive at all”.

On the other side of the spectrum, in both web experiences, animated ads are the formats encountering the worst user sentiment.

In the image gallery experience, the two ad formats which are positioned at the end of the gallery are performing equally well and are not too far from the performance of the Acceptable Ads formats. As these ads are positioned after the main content has been

consumed and are not shown unexpectedly after the first image of the gallery, they are significantly lower in negative sentiment as compared to the ad formats positioned inside the gallery. In conclusion, independent of the method of analysis, Acceptable Ads formats are the highest performing and animated ads the lowest performing common denominator.

Ads performing from best to worst are:

Article Page

Rank	Ad format
1	Acceptable Ad- 728x90, Above paragraph, static
2	In-content – 728x90, Between paragraph, static
3	In-content - 840x150, Between paragraph, static
4	In-content - 300x250, Between paragraph, static
5	In-content – 970x250, Between paragraph, static
6	In-content - 970x250, Between paragraph, animated

Image Gallery

Rank	Ad format
1	Acceptable Ad - 728x90, above image gallery, static
2	Acceptable Ad – 300x250, next to image gallery, static
3	In-content ad - 300x250, end of images (page 4 of 4), static
4	In-content ad - 468x400, end of images (page 4 of 4), static
5	In-content ad - 468x400, between images (page 2 of 4), static
6	In-content ad - 300x250, between images (page 2 of 4), static
7	In-content ad - 468x400, between images (page 2 of 4), animated

While the level of disruption suggests that five additional ad formats could be considered acceptable in total (article page: rank 2-4, image gallery: rank 3 and 4), further data analysis shows a moderate drop in ratings from the Acceptable Ads experience towards any in-content ad format. However, a drop in ratings from the tested Acceptable Ad formats towards in-content ads was to be expected.

The dropped rating from the existing Standard is visible, yet small enough to consider at least four of the tested formats to be acceptable:

- Article Page, 728x90, Between paragraph, static
- Article Page, 840x150, Between paragraph, static
- Image Gallery, 300x250, end of images (page 4 of 4), static
- Image Gallery, 468x400, end of images (page 4 of 4), static

Within the article experience, the Wasserstein distance analysis shows that the 300x250 format is very close in ratings towards the (not acceptable) 970x250 ad, requiring special consideration.

To gain more clarity around this edge case (300x250), the data was further analyzed by looking at different age groups.

The investigation of the age effect was conducted for the following reasons:

1. As Chapter 6.3 shows, it is likely that a younger participant rates any given ad more negatively than an older participant.
2. Ad-blocking and ad-filtering users tend to be younger (Young (2016), Zhao et al. (2017), eMarketer (2017)). Hence, the ad ratings of the younger generation are of special interest as they are the dominant ad-blocker user group. The highest rates of ad blocking usage can be found in the age group between 16 and 44. The rates according to Hootsuite's "[Digital 2021 Global Report](#)" can be found in Table 4.

Table 4: Use of ad blockers in 2021

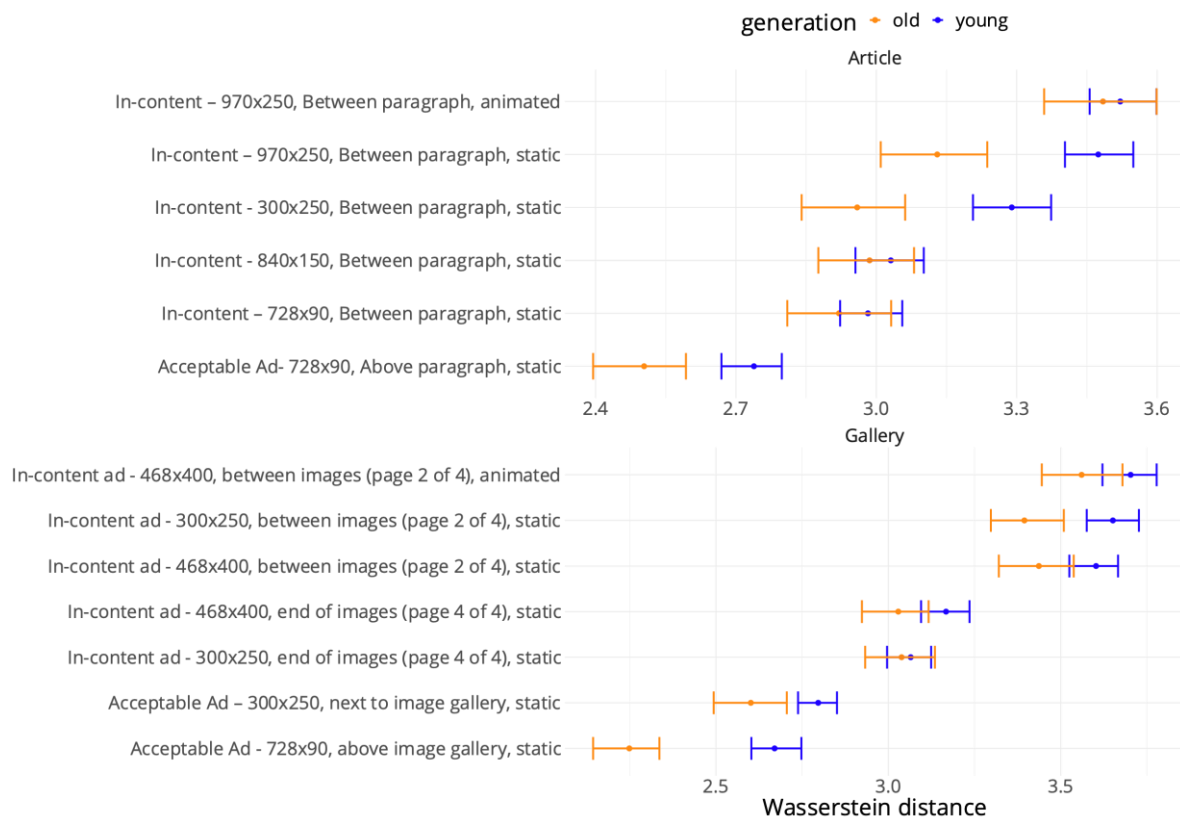
Percentage of global internet users who use tools to block online advertisement each month

Age group	Female	Male
16-24	43.2%	49.2%
25-34	43.0%	47.6%
35-44	38.4%	44.8%
45-54	33.5%	39.1%
55-64	32.1%	37.3%

Source: Digital 2021 Global Report by Hootsuite

Figure 8: Wasserstein distance metric for the ECDF between ad types and the theoretical best ad grouped by generation

The young generation is between 16 and 44 years old. The old generation is older than 45 years. The confidence interval is a 95% confidence interval.



The age effect on the Wasserstein distance metric is demonstrated in Figure 8. It presents each advertisement's Wasserstein distance to the theoretical best ad grouped by

generation. The young generation is grouped by the age range 16 to 44, while the old generation encompasses all participants older than 44. Results demonstrate that younger users generally perceive the tested ad formats worse than the older generation, but the effect is particularly strong when it comes to the 300x250 ad format. In the article experience, the 300x250 static ad placed in-content is perceived significantly worse by the younger participants than the older ones. In contrast, their ratings of the 728x90 and the 840x150 in-content static ads placed in the content are concordant.

8. Combined ad experience ranking

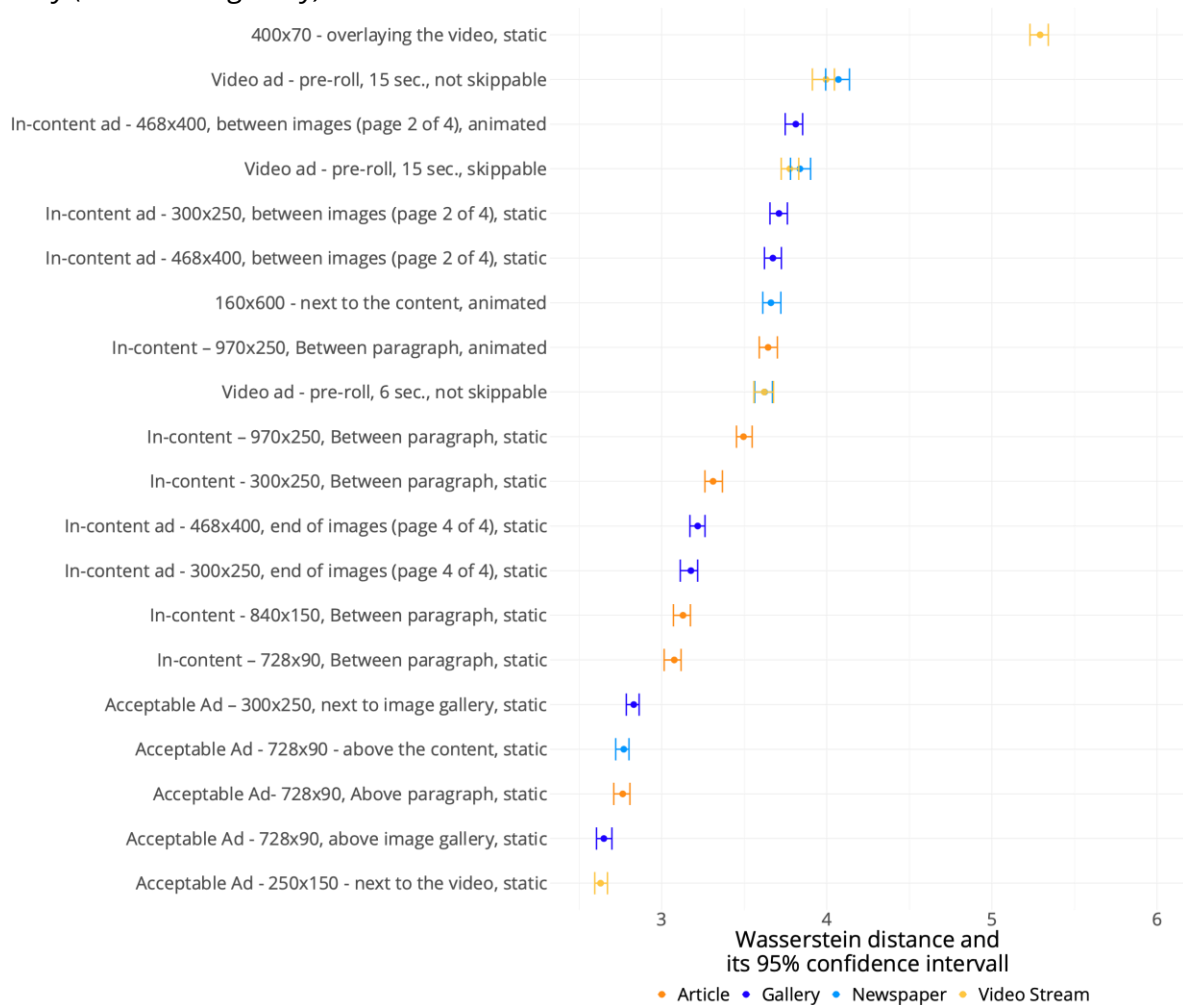
As the current survey design regarding the rating of the different advertisements is the same as the [video advertisement survey](#) the AAC performed in 2020, both data sets were combined to create an overall ranking of all tested ad formats. The result is presented in Figure 9.

Figure 9 shows that the ad formats group themselves into four clusters. One cluster contains all existing Acceptable Ads formats. The next cluster contains all ad formats that are close to the performance of the Acceptable Ads formats: the in-content 728x90 and 840x150 static ad, both static ads placed at the end of the image gallery and the 300x250 between paragraph static ad². The last group contains all the ad formats that received the less favorable ratings. Those ad formats are either highly disruptive like the ads placed between the images of a gallery, highly annoying like all types of animated ads or highly intrusive due to their size dimension like the 970x250 static in-content ad. If these negative factors are combined, the ads fall into the last cluster: these ads are intrusive and annoying as they are either placed within the image gallery and animated, or they are long (non-skippable or skippable) video ads.

² However, the in-content 300x250 ad format kind of builds the bridge between this cluster and the next cluster, which contains the worst performing ad formats; so that it is not very clear in which cluster this ad format belongs.

Figure 9: Wasserstein distance metric for the ECDF between ad types and the theoretical best ad

Comparison of all tested ad formats in different web experiences used in the AAC Video advertisement study (newspaper and video stream) and the AAC In-article and in-gallery ads survey (article and gallery)



9. Knowledge and perception of the Acceptable Ads Standard

The survey concluded with questions about participants' general knowledge and perception of the Acceptable Ads Standard. 12.4% knew Acceptable Ads well, 21.5% had heard about it, and the rest were unfamiliar with the concept. Conclusively, roughly a third of participants knew Acceptable Ads. Since this survey was conducted among ad-blocking and ad-filtering users in general, participants of the survey were not necessarily exposed to Acceptable Ads during their daily browsing experience. Results also show that younger age groups were more aware of Acceptable Ads.

In addition, the participants were asked to give their opinion on the concept behind Acceptable Ads in a free text field. The given answers and sentiments were investigated using two text analyzing models. Both models are transformer-based machine learning techniques for natural language processing. Figure 10 presents the combined results of both models.

Figure 10: Sentiment regarding the concept of Acceptable Ads split by age and general knowledge about Acceptable Ads

Sentiment is based on a deep learning model. The more confident both algorithms are regarding the sentiment, the stronger the estimated sentiment.

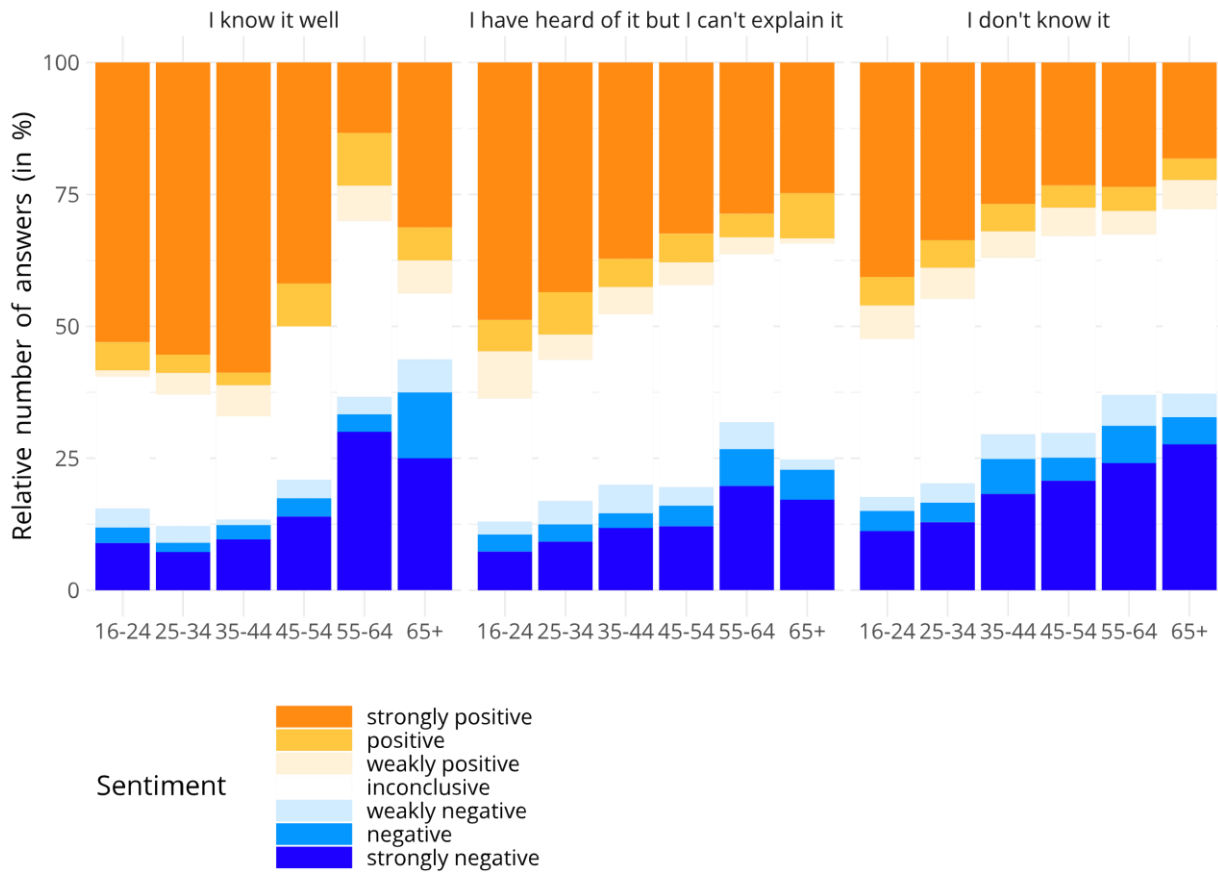


Figure 10 demonstrates how participants feel about the concept of Acceptable Ads, depending on the level of knowledge they have of the Standard. In addition, participants were grouped by age to investigate whether the age of a participant influences their perception of the concept.

Results show that the younger the participants were thinking about Acceptable Ads in a positive manner. Additionally, it is observed that participants tend to feel positively about Acceptable Ads if they previously indicated they have heard about the concept or knew it well. By contrast, those who indicated they did not know about Acceptable Ads had often entered entirely inconclusive statements, or said they were unsure or did not have an opinion.

Figure 10 gives a first descriptive overview about what might have influenced the sentiment towards the concept of Acceptable Ads. A general logistic model was used to better understand all possible influencing variables. The 'general sentiment of the participant' represented the dependent variable.

To increase the robustness of the model, the dimensionality of the sentiments was reduced, and all different sentiment levels were summarized into their corresponding overall sentiment type. For example, the answers classified as weakly or strongly positive are recoded as just "positive". The same holds true for all the different degrees of negative sentiments. Additionally, only positive or negative statements were used. Inconclusive statements were left out as they do not allow for reliable predictions. The following factors were used as predictors: the participant's ad blocker software; the participant's general attitude towards online advertisement; the participant's knowledge about Acceptable Ads; the participant's age; the participant's gender; the participant's origin; the variant presented to the participant explaining the concept of Acceptable Ads.

There were two variants explaining the concept of Acceptable Ads. One was slightly longer containing an educational part to explain the value of Acceptable Ads to publishers. The shorter variant was reduced to a mere definition of what Acceptable Ads is. Thereby, it could be tested if Acceptable Ads formats were perceived more positively when more than just the user's benefits are presented. The results show that the odds of having a positive sentiment towards Acceptable Ads is higher by a factor of 2.16 per unit of the total score measuring the general attitude towards online advertising. Stated differently, the more positive the general attitude towards online advertisement, the higher the probability that the participants will have a positive sentiment towards Acceptable Ads. In addition, the older the participant is, the less likely he/she will perceive Acceptable Ads positively. It is also more likely that a participant from France or Germany will like the concept of Acceptable Ads than a participant from the US. The general knowledge about Acceptable Ads, the participant's gender and the specific ad blocker used have no effect on the sentiment. However, it seems that a comprehensive

explanation of Acceptable Ads can likely create positive sentiment among the participants.

Besides investigating the general sentiment towards Acceptable Ads, the open text answers were analyzed using an artificial neural network to find semantically similar answers. To calculate the pairwise semantic similarities, the answers given in German and French first needed to be translated into English. This was done using the DeepL API, which is an interface for performing neural machine translations.

One can think of each answer to be connected to another answer via its pairwise similarity. The more similar the answers, the stronger their connection (= high similarity score). Thus, graph-based algorithms can be used to find the most important (most central sentences with the strongest connections to the other answers) answers in all answers. Table 5 presents the top 15 most connected and thereby most representative answers.

Table 5: Top 15 most representative answers about the sentiment towards the Acceptable Ads concept

The answers are the original answers and therefore include grammar and spelling errors.

Answer's rank	Answer
1	I think this is a good idea. Because ads are essential to many sites, and making them acceptable makes it less intrusive for the user
2	Interesting concept, to see if the ads are not too intrusive
3	I think it's a good idea. Ads are important to pay for so if they are not annoying and identified, I think it's good.
4	It's a good idea, especially since the ads are not intrusive and therefore do not harm the user
5	it's a good concept if it allows to remove intrusive ads
6	I find it a good way to show ads without being invasive
7	I think it's a good idea as long as the ads are truly not intrusive
8	Not a bad idea, as annoying and distracting ads are filtered out. I have nothing against unobtrusive advertising in principle.
9	I think it's good to help not have intrusive ads
10	I think it's a good idea, because they are nonintrusive ads and it helps the site we are visiting
11	It can be interesting if the ads are not too intrusive
12	I believe it to be a good concept in which ads are not blocked but also not annoying or obtrusive to the viewer.
13	I like this concept because I don't mind ads if they aren't intrusive
14	Pretty good, it's a good way to avoid having intrusive and disturbing ads.
15	It's a good concept that allows you to choose non-intrusive ads

Table 5 demonstrates most of the answers are very positive. Participants like the concept of Acceptable Ads because they are not intrusive, distracting or annoying. Also, participants understand that ads help to support websites.

To investigate the open text answers further, a cluster algorithm was used. It was based on the answers' pairwise semantic similarities to find common topics across all answers. The algorithm reveals the following:

Some participants are skeptical or clearly against the concept of Acceptable Ads as they do not like advertisements of any kind. Various reasons are mentioned: 'ads manipulate

and seduce to consumption', 'ads interfere with the actual user's task' and 'internet speed/page loading time is reduced'. In addition, these participants are skeptical regarding the actual implementation of Acceptable Ads. They question whether there is only one universal definition of acceptability and the potential risk in regarding the exploitation of the Standard. Furthermore, they perceive that Acceptable Ads works against the primary reason of having an ad blocker.

In general, however, the majority of the participants perceive the concept of Acceptable Ads positively. The main reason being they are nonintrusive, as opposed to any pop-up ads, animated ads or (auto-playing) video ads. At large, Acceptable Ads formats improve the web experience by reducing the overall number of annoying ads. They are perceived as being a (clear) improvement as compared to traditional ads. In addition, they represent a fair compromise between the users' and the content creators' interests. Some participants would only use Acceptable Ads on their ad blocker if they could individually choose what ads are acceptable and/or if an opt-in option is available.

10. Conclusion

This study analyzed ad-blocking and ad-filtering users' sentiments towards ads placed in "primary" content on desktop devices. The formats tested included advertising types that comply with the provisions of the Acceptable Ads Standard as well as ad units which are not compliant with the Standard.

Results show that sizes, particularly height dimensions, are an important factor. In addition, it is also apparent that an unexpected complete interruption of content (as is the case of the image gallery web experience) also makes a significant difference for users in terms of their perceived intrusiveness, annoyance, and perceived obstructiveness. This study also once again brought forward data that clearly proves that websites participating with Acceptable Ads perform similarly well as websites without any advertisement when it comes to users' perceptions.

In total, five ad formats were identified that could be added to the Acceptable Ads Standard, pending the Acceptable Ads Committee's decision:

In an article page setting:

- 728x90, between paragraph, static
- 840x150, between paragraph, static
- 300x250, between paragraph, static

In an image gallery setting:

- 300x250, end of images (page 4 of 4), static
- 468x400, end of images (page 4 of 4), static

In line with the Acceptable Ads Committee [bylaws](#), the committee's decision and potential changes to the Standard based on this report will be published and opened for further user feedback for one month.

Along with examining ad-blocking users' perception and potential acceptance of ads placed in their primary content flow, the study further investigated the participants' awareness of the concept of Acceptable Ads and their attitude towards it. The awareness about the concept itself varies. Upon explanation of what the concept is, the majority of users indicate a clearly positive attitude toward it. The data also indicates that users who knew about the concept before also tend to have a more positive sentiment toward it.

11. Limitation and further research

This research is focused on the ad's position. However, there are various additional factors that can influence the user's perception of an ad, the ads performance, as well as the user's overall website satisfaction. One factor not having been scrutinized in this study is on what the online advertising industry terms "contextual advertising" or what academia refers to as "congruent advertising". It is about the website's and ad's content

in relation to one another. There is plenty of research suggesting that such congruence has effects on banner ad recognition (Goldfarb & Tucker, 2011; Moore & Rodgers, 2005). It would be interesting to see to what extent contextually placed ads would impact the users' perception of the ads, the advertised brand, and how this may affect their satisfaction with the website overall.

In addition, only non-native ads have been tested. However, research shows that native ads could be perceived to be intrusive as website visitors need to spend more cognitive power to distinguish a native ad from primary content (see for example Redondo & Aznar (2018) or Wen et al. (2020)). Therefore, the transferability of the found results on in-content native ads is questionable.

Like previous AAC research, this study was conducted with qualitative interviews and questionnaires. Despite mimicking an as authentic website experience as much as possible, the questionnaire, with its imbedded website lookalike pages, remains an artificial space for the survey participant. This cannot be considered fully identical with what ad-blocking and ad-filtering users would encounter on a real website in terms of the number of ads in viewport or the intrinsic interest in the presented article content, etc. Realistically, there is a decent chance that the users would be exposed to more than just one ad at a time on one page. There could also be an accumulative effect of viewed ads during the complete browsing time. In this study, however, the ad exposure was intentionally designed to only show a single ad unit to better control the perceptual effects of its specific position. Additionally, during their normal web browsing, users typically self-select content they want to engage with. The subjective genuine interest and potential higher level of engagement with the chosen article or the content of an image gallery may also influence the perceived level of interruption and annoyance.

Testing ad-blocking and ad-filtering users' reactions and sentiments on live websites would be ideal in order to observe their behavior with full authenticity.

In addition, the study is limited regarding the markets it inspected. It was conducted among participants from the United States of America, France and Germany. Acceptable Ads, however, is a global product catering to many more countries and It would be interesting to explore this study in other markets and cultures.

Lastly, the reasons why users find specific advertising formats more annoying than others also were not investigated. This, however, would yield valuable insights for both publishers and advertisers. They could better understand the specifics of what draws users to (or away) from a brand and a website.

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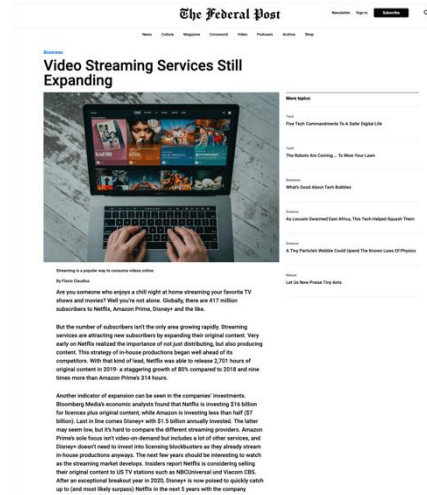
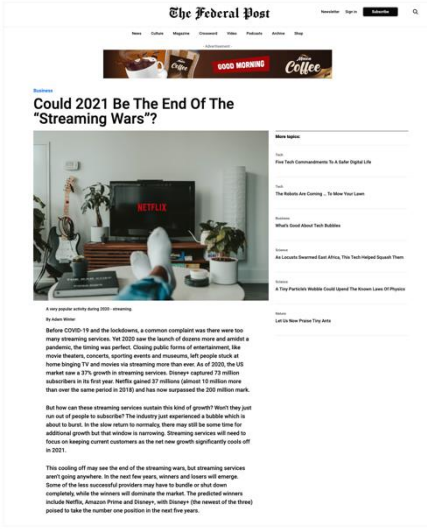
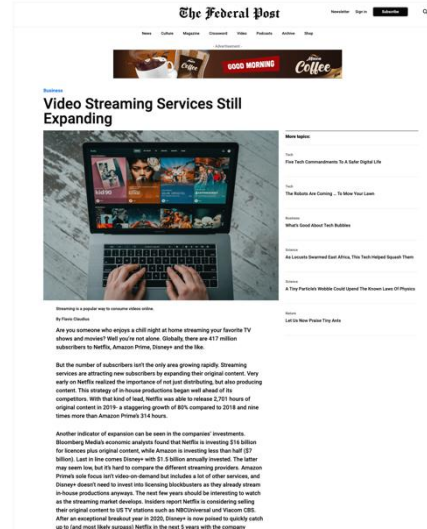
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Appendix

List of tested ad types

Context	Ad name	Size	Location	Animation
Newspaper article	No ad experience	-	-	-
Newspaper article	Acceptable Ad – Top Leaderboard	728x90	Above paragraph	Static
Newspaper article	In-content Leaderboard	728x90	Between paragraph	Static
Newspaper article	In-content Medium Rectangle	300x250	Between paragraph	Static
Newspaper article	In-content Billboard	970x250	Between paragraph	Static
Newspaper article	In-content Billboard	970x250	Between paragraph	Animated
Newspaper article	In-content Large Leaderboard	840x150	Between paragraph	Static
Image gallery	No ad experience	-	-	-
Image gallery	Acceptable Ad – Top Leaderboard	728x90	Top	Static
Image gallery	Acceptable Ad – Medium Rectangle	300x250	Next to image	Static
Image gallery	In-content Medium Rectangle	300x250	Between images (page 2 of 4)	Static
Image gallery	In-content Medium Rectangle	300x250	End of images (page 4 of 4)	Static
Image gallery	In-content XL Rectangle	468x400	Between images (page 2 of 4)	Static
Image gallery	In-content XL Rectangle	468x400	Between images (page 2 of 4)	Animated
Image gallery	In-content XL Rectangle	468x400	End of images (page 4 of 4)	Static

Example set of web experiences

Web experience	Ad format	Content variant 1	Content variant 2
Article	No ad experience		
Article	Acceptable Ad- 728x90, Above paragraph, static		
Coffee Brand			

Orange Brand

Could 2021 Be The End Of The "Streaming Wars"?

A very public victory during 2020... streaming.

Before COVID-19 and the lockdowns, a common complaint was there were too many streaming services. The 2020 saw the launch of dozens more and amidst a pandemic, the timing was perfect. Closing public forms of entertainment, like movie theaters, concerts, sporting events and museums, left people stuck at home bringing TV and movies via streaming more than ever. As of 2020, the US market saw a 37% growth in streaming services. Disney captured 72 million subscribers in its first year. Netflix gained 37 million (almost 15 million more than over the same period in 2019) and has now surpassed the 200 million mark.

But how can these streaming services sustain this kind of growth? Won't they just run out of people to subscribe? The industry just experienced a bubble which is about to burst. In the slow return to normalcy, there may still be some time for additional growth but that window is narrowing. Streaming services will need to focus on keeping current customers as the net new growth significantly cools off in 2021.

This cooling off may see the end of the streaming wars, but streaming services aren't going anywhere. In the next few years, content and users will emerge. Some of the less successful providers may have to bundle or shut down completely, while the winners will dominate the market. The predicted winners include Netflix, Amazon Prime and Disney, with Disney (the newest of the three) poised to take the number one position in the next few years.

Video Streaming Services Still Expanding

Streaming is a popular way to consume online content.

Are you someone who enjoys a chill night at home streaming your favorite TV shows and movies? Well you're not alone. Globally, there are 417 million subscribers to Netflix, Amazon Prime, Disney and the like.

But the number of subscribers isn't the only area growing rapidly. Streaming services are attracting new subscribers by expanding their original content. Very early on Netflix realized the importance of not just distributing, but also producing content. This strategy of in-house productions began well ahead of its competitors. With the kind of lead, Netflix was able to release 270 hours of original content in 2019 - a staggering growth of 80% compared to 2018 and nine times more than Amazon Prime's 314 hours.

Another indicator of expansion can be seen in the companies' investments. Bloomberg Media's economic analysis found that Netflix is investing \$14 billion for licenses plus original content, while Amazon is investing less than half (\$7 billion). Last in line comes Disney with \$1.3 billion annually invested. The latter may seem low, but it's hard to compare the different streaming providers. Amazon Prime's vast focus isn't video-on-demand but includes a lot of other services, and Disney doesn't need to invest into licensing blockbusters as they already stream in-house productions anyway. The next few years should be interesting to watch as the streaming market develops. Insider report Netflix is considering selling their original content to US TV stations such as NBCUniversal and ViacomCBS. After an exceptional breakout year in 2020, Disney is now poised to quickly catch up to last month they reported Netflix in the next 5 years with the company projecting subscribers to be over 230 million by 2024.

Article In-content - 728x90, Between paragraph, static

Coffee Brand

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But how can these streaming services sustain this kind of growth? Won't they just run out of people to subscribe? The industry just experienced a bubble which is about to burst. In the slow return to normalcy, there may still be some time for additional growth but that window is narrowing. Streaming services will need to focus on keeping current customers as the net new growth significantly cools off in 2021.

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Another indicator of expansion can be seen in the companies' investments. Bloomberg Media's economic analysis found that Netflix is investing \$14 billion for licenses plus original content, while Amazon is investing less than half (\$7 billion). Last in line comes Disney with \$1.3 billion annually invested. The latter may seem low, but it's hard to compare the different streaming providers. Amazon Prime's vast focus isn't video-on-demand but includes a lot of other services, and Disney doesn't need to invest into licensing blockbusters as they already stream in-house productions anyway. The next few years should be interesting to watch as the streaming market develops. Insider report Netflix is considering selling their original content to US TV stations such as NBCUniversal and ViacomCBS. After an exceptional breakout year in 2020, Disney is now poised to quickly catch up to last month they reported Netflix in the next 5 years with the company projecting subscribers to be over 230 million by 2024.

Orange Brand

Could 2021 Be The End Of The "Streaming Wars"?

A very public victory during 2020... streaming.

Before COVID-19 and the lockdowns, a common complaint was there were too many streaming services. The 2020 saw the launch of dozens more and amidst a pandemic, the timing was perfect. Closing public forms of entertainment, like movie theaters, concerts, sporting events and museums, left people stuck at home bringing TV and movies via streaming more than ever. As of 2020, the US market saw a 37% growth in streaming services. Disney captured 72 million subscribers in its first year. Netflix gained 37 million (almost 15 million more than over the same period in 2019) and has now surpassed the 200 million mark.

But how can these streaming services sustain this kind of growth? Won't they just run out of people to subscribe? The industry just experienced a bubble which is about to burst. In the slow return to normalcy, there may still be some time for additional growth but that window is narrowing. Streaming services will need to focus on keeping current customers as the net new growth significantly cools off in 2021.

This cooling off may see the end of the streaming wars, but streaming services aren't going anywhere. In the next few years, content and users will emerge. Some of the less successful providers may have to bundle or shut down completely, while the winners will dominate the market. The predicted winners include Netflix, Amazon Prime and Disney, with Disney (the newest of the three) poised to take the number one position in the next few years.

Video Streaming Services Still Expanding

Streaming is a popular way to consume online content.

Are you someone who enjoys a chill night at home streaming your favorite TV shows and movies? Well you're not alone. Globally, there are 417 million subscribers to Netflix, Amazon Prime, Disney and the like.

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Article In-content - 300x250, Between paragraph, static

Coffee Brand

The screenshot shows a news article from 'The Federal Post' with the headline 'Could 2021 Be The End Of The Streaming Wars?'. The article discusses the streaming industry's performance during the COVID-19 pandemic and its outlook for 2021. A 300x250 advertisement for a coffee brand is placed between two paragraphs of the article. The ad features a cup of coffee and the word 'Coffee' in a stylized font.

The screenshot shows a news article from 'The Federal Post' with the headline 'Video Streaming Services Still Expanding'. The article discusses the continued growth of streaming services and the challenges they face. A 300x250 advertisement for a coffee brand is placed between two paragraphs of the article. The ad features a cup of coffee and the word 'Coffee' in a stylized font.

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Article In-content - 970x250, Between paragraph, static

Coffee Brand

The screenshot shows the top half of a news article on 'The Federal Post' website. The article title is 'Could 2021 Be The End Of The Streaming Wars?'. Below the title is a photo of a living room with a TV displaying the Netflix logo. To the right of the photo is a list of related articles. Below the main text, there is a promotional banner for Amazon Coffee with the slogan 'The only right way to wake up' and a 'COFFEE' button.

The screenshot shows the top half of a news article on 'The Federal Post' website. The article title is 'Video Streaming Services Still Expanding'. Below the title is a photo of a hand using a laptop with streaming service logos on the screen. To the right of the photo is a list of related articles. Below the main text, there is a promotional banner for Amazon Coffee with the slogan 'The only right way to wake up' and a 'COFFEE' button.

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Article In-content - 840x150, Between paragraph, static

Coffee Brand

The screenshot shows a news article from 'The Federal Post' titled 'Could 2021 Be The End Of The Streaming Wars?'. The article discusses the streaming industry's growth and challenges. At the bottom of the article, there is a coffee advertisement for 'GOOD MORNING Coffee' with the tagline 'The cozy right way to wake up'.

The screenshot shows a news article from 'The Federal Post' titled 'Video Streaming Services Still Expanding'. The article discusses the continued growth of streaming services. At the bottom of the article, there is a coffee advertisement for 'GOOD MORNING Coffee' with the tagline 'The only right way to wake up'.

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Article

In-content - 970x250, Between paragraph, animated

Coffee Brand

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Orange Brand

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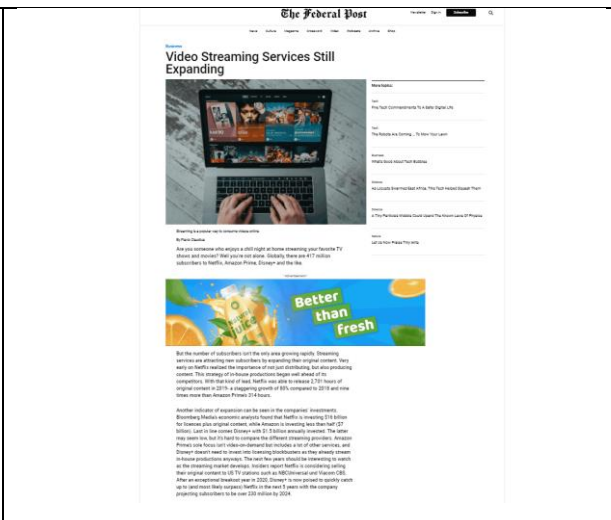
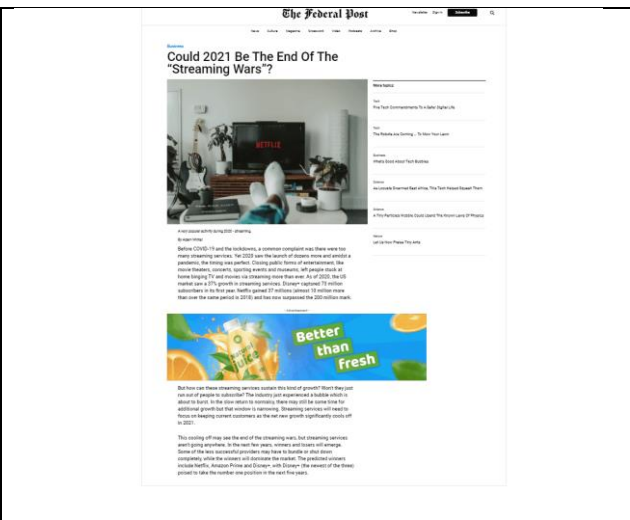


Image gallery

No ad experience



Image gallery

Acceptable Ad - 728x90, above image gallery, static

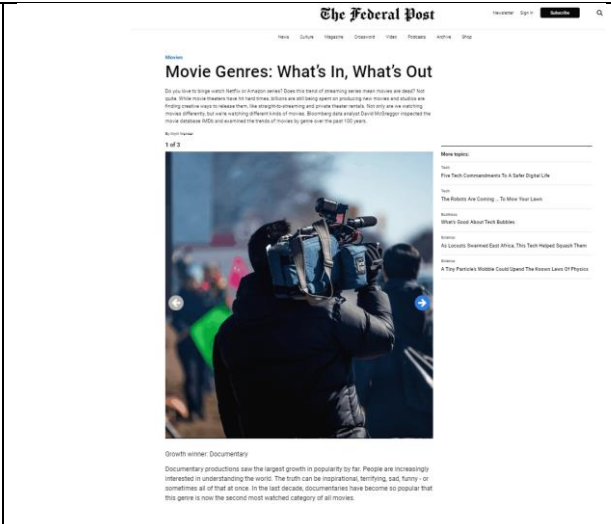
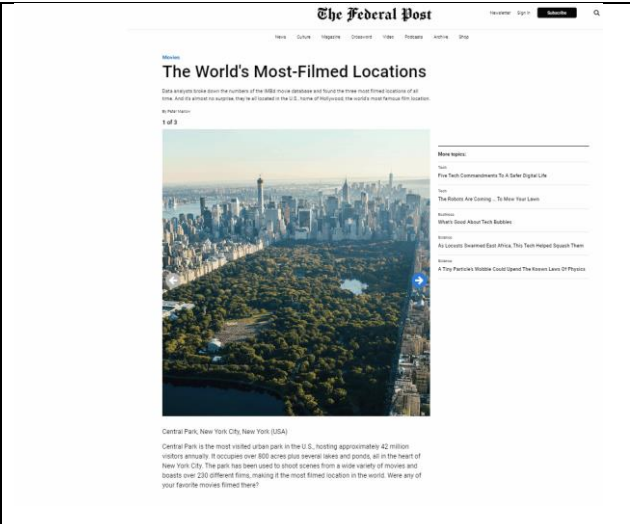
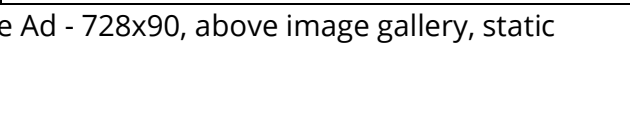


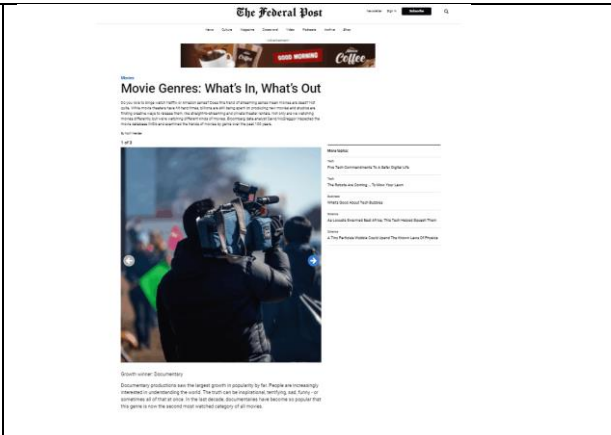
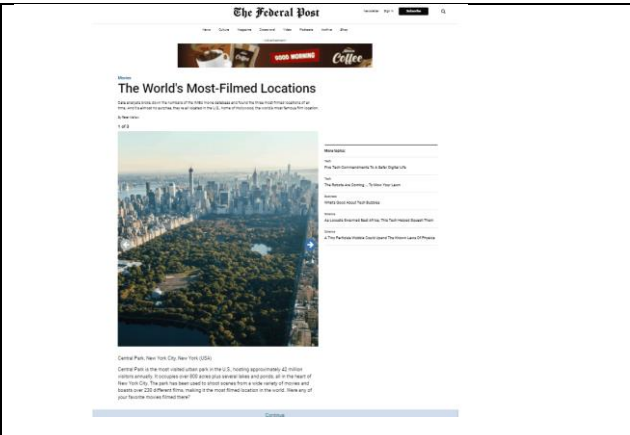
Image gallery

Acceptable Ad - 728x90, above image gallery, static



Coffee brand

Coffee brand



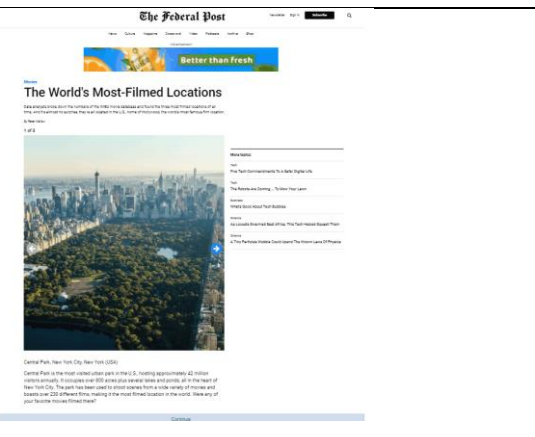

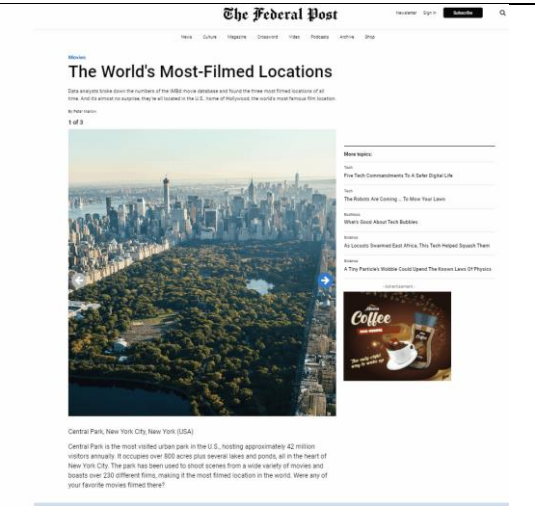
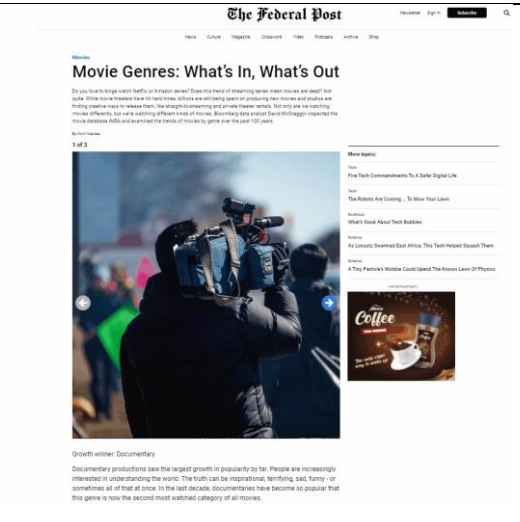
	Orange brand	 <p>The World's Most-Filmed Locations</p> <p>Central Park, New York City, New York (USA)</p> <p>Central Park is the most visited urban park in the U.S., hosting approximately 42 million visitors annually. It occupies over 800 acres plus several lakes and ponds, all in the heart of New York City. The park has been used to shoot scenes from a wide variety of movies and boasts over 230 different films, making it the most filmed location in the world. Were any of your favorite movies filmed there?</p> <p>More topics:</p> <ul style="list-style-type: none"> Five Tech Commitments To A Safer Digital Life The Robots Are Coming - To Miss Your Lash Who's Good About Tech Bubbles? As Locusts Swarmed East Africa, This Tech Helped Squash Them A Top Particle's Middle Count(Down) The Resonance Levels Of Physics <p>Advertisement: Coffee</p>	 <p>Movie Genres: What's In, What's Out</p> <p>Do you like to binge watch Netflix or Amazon Prime? Does this kind of streaming service mean movies are dead? Not so fast. While movie theater has hit hard times, it still has a strong grip on producing new movies and studios are finding creative ways to release them, like releasing streaming and print together. Not only are we watching movies differently, but we're watching different kinds of movies. Streaming data analyst David D'Angelo tracked the movie database IMDb and we sorted the kinds of movies by genre over the past 10 years.</p> <p>More topics:</p> <ul style="list-style-type: none"> Five Tech Commitments To A Safer Digital Life The Robots Are Coming - To Miss Your Lash Who's Good About Tech Bubbles? As Locusts Swarmed East Africa, This Tech Helped Squash Them A Top Particle's Middle Count(Down) The Resonance Levels Of Physics <p>Advertisement: Coffee</p>
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Image gallery	Acceptable Ad – 300x250, next to image gallery, static
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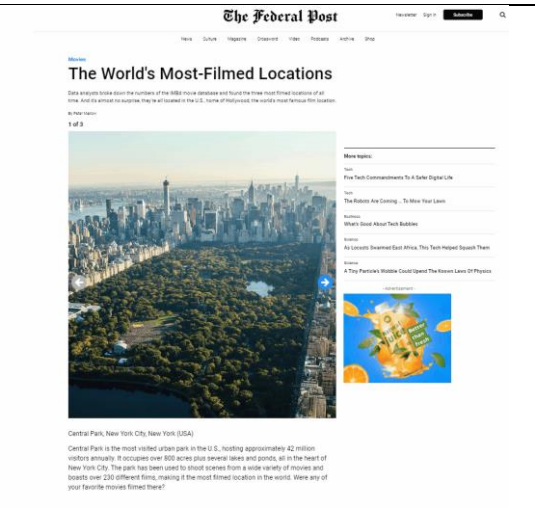
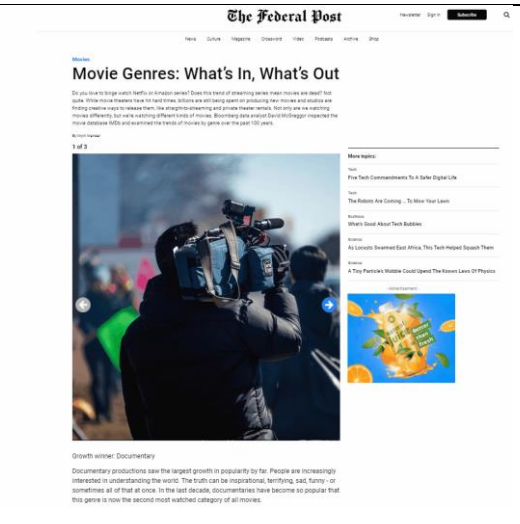
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Image gallery	In-content ad - 300x250, end of images (page 4 of 4), static
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Coffee brand

The World's Most-Filmed Locations

Data analysts broke down the numbers of the IMDb movie database and found the three most filmed locations of all time, and to make no surprise they're all located in the U.S. Some of Hollywood's world's most famous film locations.

1 of 4

More topics:

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Growth winner: Documentary

Documentary productions saw the largest growth in popularity by far. People are increasingly interested in understanding the world. The truth can be inspirational, terrifying, sad, funny - or sometimes all of that at once. In the last decade, documentaries have become so popular that this genre is now the second most watched category of all movies.

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Image gallery

In-content ad - 468x400, end of images (page 4 of 4), static

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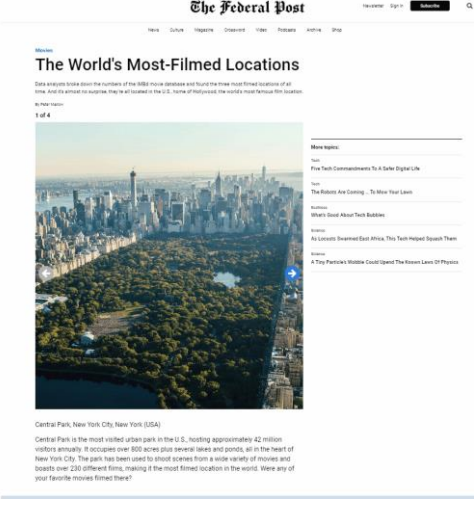
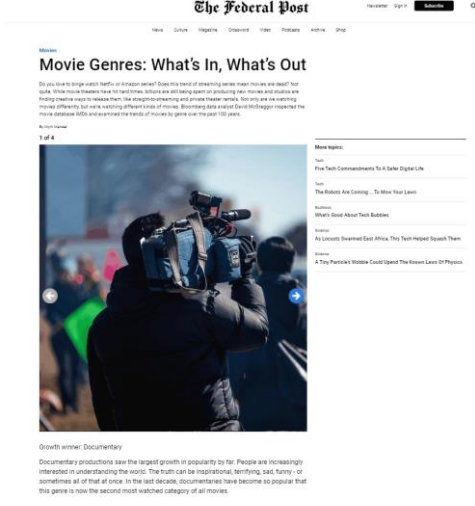
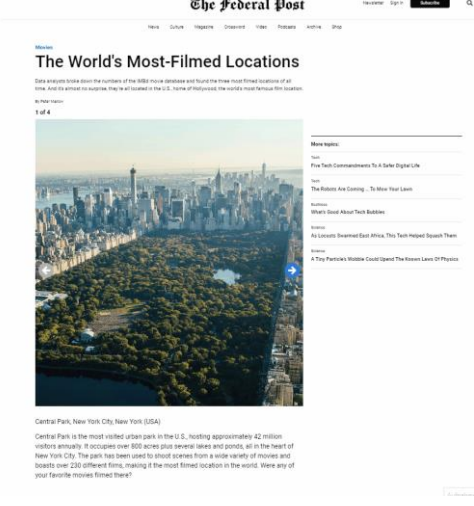
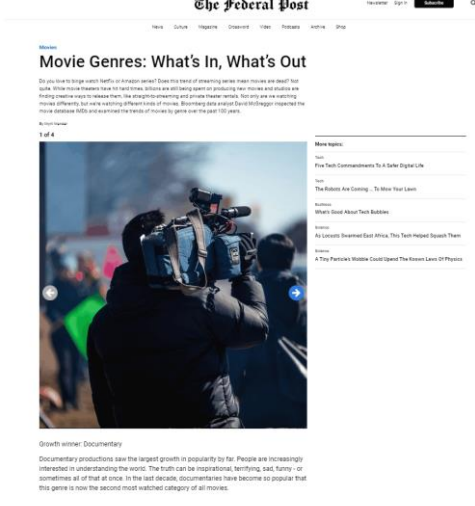
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Image gallery	In-content ad - 300x250, end of images (page 2 of 4), static
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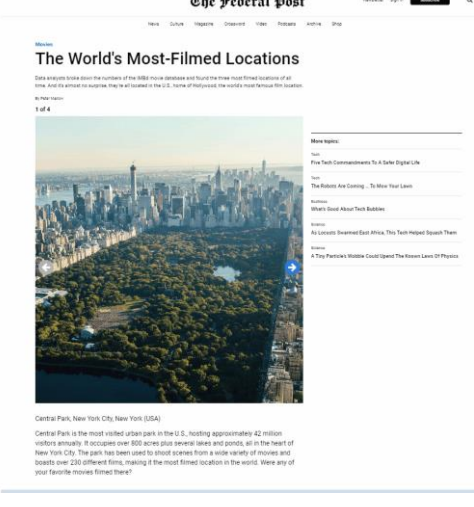
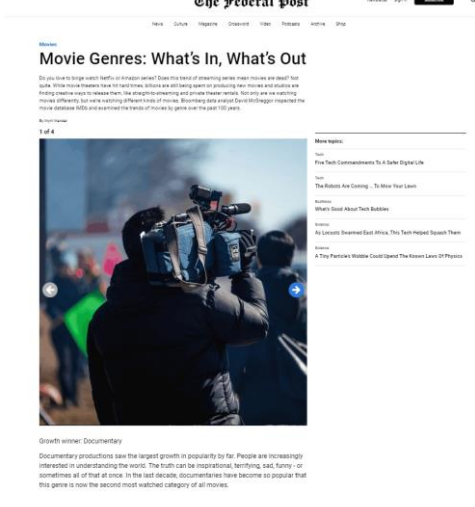
Orange brand		 <p>The World's Most-Filmed Locations</p> <p>Data analysts took a look at the numbers of the IMDb movie database and found the three most filmed locations of all time. And it's not as surprising as you'd think: the U.S. home of Hollywood is the world's most filmed film location.</p> <p>Central Park, New York City, New York (USA)</p> <p>Central Park is the most visited urban park in the U.S., hosting approximately 42 million visitors annually. It occupies over 800 acres plus several lakes and ponds, all in the heart of New York City. The park has been used to shoot scenes from a wide variety of movies and boasts over 230 different films, making it the most filmed location in the world. Were any of your favorite movies filmed there?</p>	 <p>Movie Genres: What's In, What's Out</p> <p>Do you like to binge watch Netflix or Amazon Prime? Does the idea of streaming series mean movies are dead? Not quite. While movie theaters have hit hard times, which are still being spent on producing new films and studios are finding creative ways to release them, the streaming era is changing the way we watch movies. Not only are we watching more differently, but we're watching different kinds of movies. Streaming data analyst David D'Angelo inspected the movie database IMDb and analyzed the trends of movies by genre over the past 100 years.</p> <p>Growth winner: Documentary</p> <p>Documentary productions saw the largest growth in popularity by far. People are increasingly interested in understanding the world. The truth can be inspirational, terrifying, sad, funny, or sometimes all of that at once. In the last decade, documentaries have become so popular that this genre is now the second most watched category of all movies.</p>
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Image gallery	In-content ad - 468x400, end of images (page 2 of 4), static
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Coffee brand

The World's Most-Filmed Locations

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More topics:

- Five Tech Commitments To A Safer Digital Life
- The Robots Are Coming - To Miss Your Lamin
- Who's Good About Tech Bubbles
- All Locals Swarmed East Africa. This Tech Helped Squash Them
- A Top Patent's Wobble Could Open The Room Lanes Of Physics

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Movie Genres: What's In, What's Out

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1 of 4

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Image gallery

In-content ad - 468x400, between images (page 2 of 4), animated

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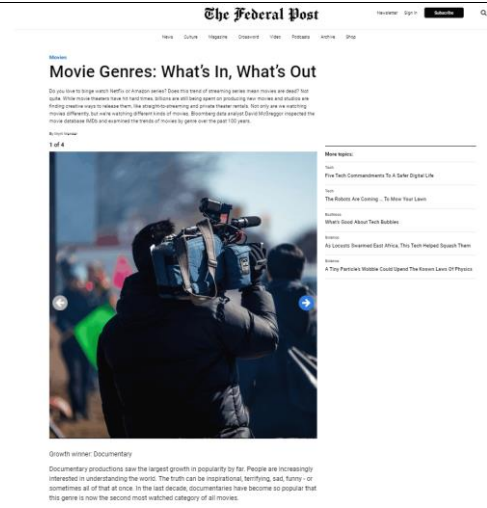
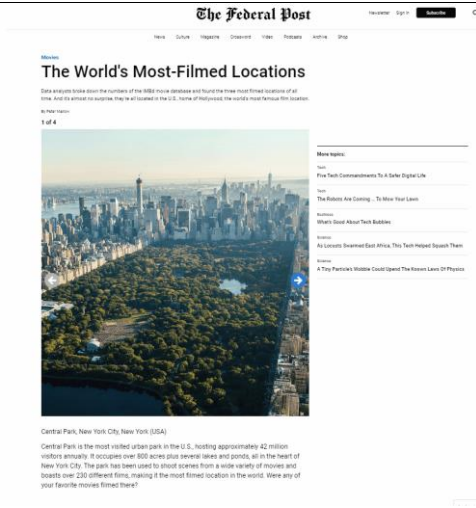
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Orange brand



Questionnaire

All questions and the corresponding possible answers to select from.

	Question text	Explanation
Q1	What is your gender?	
a	Male	
b	Female	
c	Other	
d	Prefer not to say	
Q2	How old are you?	
Q3	What types of technologies do you currently own or use? Select all that apply:	
a	Home assistant (Google Home, Amazon Echo, etc.)	
b	Smart watch (Apple Watch, Pebble, etc.)	
c	Ad blocking software (Adblock Plus, Adblock, uBlock Origin, etc.)	
d	VPN (virtual private network)	
e	Streaming service (Netflix, Hulu, etc.)	
g	AI powered political content blocker	
h	CryptoMining Adblocker	
f	Other (please specify):	
INFO1_1	In the next part of this survey, you will see a homepage of a news website. - Please visit the article about "\$VARIANT" by clicking on this article. - After viewing the page, you will be asked to answer several	The participants saw a changing introduction depending on

	<p>questions about your understanding of the text and perception of the website.</p>	<p><i>the web experience and content variant they get to see.</i></p>
INFO1_2	<p>In the next part of this survey, you will see a homepage of a news website.</p> <p>- Please visit the article about "\$VARIANT" by clicking on this article.</p> <p>- After that you'll be directed to a website showing an image gallery.</p> <p>1. Please have a look at every element in the gallery and its corresponding text below the image. You can move forward (and backward) using the blue arrows.</p> <p>2. After viewing this page you will be asked to answer several questions about your understanding of the text and perception of the website.</p>	
Q4	<p>Please read the statements below regarding the content of the presented article. Which of the following statements are true? Select all true statements.</p>	
Variant 1		
a	Streaming wars began in 1990.	
b	Netflix, Amazon Prime, and Disney+ have lost a lot of customers in 2020.	
c	The pandemic was beneficial for Netflix, Amazon Prime and Disney+.	
d	In 2020, the streaming industry did not significantly grow.	
Variant 2		
a	One of the most filmed locations is Paris.	
b	New York's Central Park is the most filmed location worldwide.	
c	The film industry was so active in Venice Beach that local businesses called for a ban on filming.	
d	Movie star Tom Hanks was born in Chicago.	
Variant 3		
a	Hulu was the pioneer in the streaming industry to come up with self-produced content.	
b	Disney+ invests the most money compared to other streaming services as they have to pay more in licensing fees.	
c	There is rumor that Netflix will sell their original content to TV stations.	
d	Amazon's core business is video streaming. Therefore, they invest the most into licenses.	
Variant 4		
a	The genre with the strongest decline is Horror Movies.	

b	Humor is a good idea at any time. Comedy still remains the most popular genre.	
c	The movie production will continue shrinking. Predictions say there won't be any movies anymore by 2100.	
d	In 1950 there was only one movie genre - Italo Western.	
Q5	How satisfied were you with the OVERALL EXPERIENCE of viewing this page?	
a	Very satisfied	
b	Slightly satisfied	
c	Neutral	
d	Slightly dissatisfied	
e	Very dissatisfied	
Q6	What type of ad did you notice?	
a	Video Ad	
b	Text Ad	
c	Image Ad	
d	I noticed an ad, but I don't know how to describe it	
e	I did not notice an ad	
Q7	Where was the ad located?	
a	In the article	<i>In case of the article.</i>
b	Above the article	<i>In case of the article.</i>
c	Below the article	<i>In case of the article.</i>
d	Next to the article	<i>In case of the article.</i>
e	Above the image of the gallery	<i>In case of the image gallery.</i>
f	After the first image of the gallery	<i>In case of the image gallery.</i>
g	After the last image of the gallery	<i>In case of the image gallery.</i>
h	Next to the images of the gallery	<i>In case of the image gallery.</i>

i	I can't remember the exact position.	
Q8	How disruptive was the ad to your experience?	
a	Extremely disruptive	
b	Very disruptive	
c	Disruptive	
d	Slightly disruptive	
e	Not at all disruptive	
Q9	How enjoyable was the ad?	
a	Extremely enjoyable	
b	Very enjoyable	
c	Enjoyable	
d	Slightly enjoyable	
e	Not at all enjoyable	
Q10	How annoying did you find the ad?	
a	Extremely annoying	
b	Very annoying	
c	Annoying	
d	Slightly annoying	
e	Not at all annoying	
Q11	How intrusive did you find the ad?	
a	Extremely intrusive	
b	Very intrusive	
c	Intrusive	
d	Slightly intrusive	
e	Not at all intrusive	
INFO2	Now you will see screenshots of the two webpages you just viewed. Please compare those two experiences.	
Q12	Select the experience which obstructs you the MOST from viewing content.	
a	The experience you saw 1st	
b	The experience you saw 2nd	
INFO3	Now we would like to ask you a few questions about your views on online advertising.	
Q13	What ad blocker are you currently using?	
a	Ghostery	

b	ublock Origin	
c	Brave	
d	AdBlock	
e	Adblock Plus	
f	None of the above (please specify):	
Q14	Do you know the Acceptable Ads initiative?	
a	I know it well.	
b	I have heard of it but I can't explain it.	
c	I don't know it.	
INFO4_1	The Acceptable Ads initiative promotes the use of ads that aren't intrusive or annoying. They have to be respectful, don't interfere with your browsing, and are clearly labeled as advertisement. These ads are then shown to ad-blocking users who allow Acceptable Ads.	<i>Shorter explanation variant.</i>
INFO4_2	The Acceptable Ads initiative promotes the use of ads that aren't intrusive or annoying. They have to be respectful, don't interfere with your browsing, and are clearly labeled as advertisement. These ads are then shown to ad-blocking users who allow Acceptable Ads. Most websites use advertising to make money, meaning that you can see these websites for free. By allowing Acceptable Ads ad-blocking users support the content creators by generating advertisement income through non-intrusive advertisements.	<i>Longer explanation variant.</i>
		<i>There is a 50/50 chance to see either "INFO4_1" or "INFO4_2".</i>
Q15	What is your opinion on the concept of Acceptable Ads? Briefly explain your answer.	
Q16	How much do you agree/disagree with the following statements?	
	Generally, I consider internet advertising to be a good thing	
	I appreciate seeing advertising messages on the Internet	
	Internet advertising supports free access to content	
	Online advertisements promote competition, which benefits consumers	
	Online advertisements support content creators	
	There are too many advertisements on the Internet	

	Internet advertisements intrude on the content I am accessing	
	Online advertising disrupts my activity on the Internet	
	Consumers may obtain reliable information through Internet advertising	
	Viewing online advertisements is a pleasant experience for me	
	Sometimes I take pleasure in thinking about what I saw or heard in online ads	
Answers to each statement		
a	Completely disagree	
b	Disagree	
c	Neutral	
d	Agree	
e	Completely agree	