

DO FACEBOOK USERS RECEIVE DIFFERENT ADS BASED ON THEIR ETHNIC AFFINITY (AND MORE)?

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Examples of Ad Targeting in the news

The Incredible Story Of How Target Exposed A Teen Girl's Pregnancy



Gus Lubin

Feb. 16, 2012, 10:27 AM 62,544



Target broke through to a new level of customer tracking with the help of statistical genius Andrew Pole, according to a *New York Times Magazine* cover story by Charles Duhigg.

Pole identified 25 products that when purchased together indicate a woman is likely pregnant. The value of this information was that Target could send coupons to the pregnant woman at an expensive and habit-forming period of her life.



Plugged into Target's customer tracking technology, Pole's formula was a beast. Once it even exposed a teen girl's pregnancy:

[A] man walked into a Target outside Minneapolis and demanded to see the manager. He was clutching coupons that had been sent to his daughter, and he was angry, according to an employee who participated in the conversation.

"My daughter got this in the mail!" he said. "She's still in high school, and you're sending her coupons for baby clothes and cribs? Are you trying to encourage her to get pregnant?"

The manager didn't have any idea what the man was talking about. He looked at the mailer. Sure enough, it was addressed to the man's daughter and contained advertisements for maternity clothing, nursery furniture and pictures of smiling infants. The manager apologized and then called a few days later to apologize again.

Source: <http://www.businessinsider.com/the-incredible-story-of-how-target-exposed-a-teen-girls-pregnancy-2012-2>

Netflix taunts ad blocking crowd with 'Black Mirror' ads

It'll deliver promos despite the anti-ad software you're running.



Jon Fingas, @jonfingas
10.31.16 in Internet

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You might not like that companies are trying to either discourage ad blocking or serve ads regardless, but at least they're getting creative about it. Netflix is promoting its bleak drama *Black Mirror* by serving special ads just to people spotted using ad blocking software. "You cannot see the ad. But the ad can see you," *Mashable* saw in one example. The ad is certainly consistent with *Black Mirror's* notion of technological breakthroughs gone wrong, but it may come as a surprise if you'd installed a blocker precisely to avoid this kind of media blitz.

Source: <https://www.engadget.com/2016/10/31/netflix-serves-black-mirror-ads-to-ad-blockers/>

Facebook Ethnic Affinity

1. Used for movie advertising.



The screenshot shows the top portion of a Guardian website article. The header is dark blue with 'the guardian' logo in white. Navigation links include 'sign in', 'search', 'jobs', 'more', and 'International'. Below the header is a secondary navigation bar with categories like 'home', 'tech', 'UK', 'world', 'sport', 'football', 'opinion', 'culture', 'business', and 'lifestyle'. The article title is 'Facebook's 'ethnic affinity' advertising sparks concerns of racial profiling'. The sub-headline reads 'Advertisers can target African American-, Asian American- and Hispanic-affiliated groups through the site'. Below the text is a photograph of five men walking in a warehouse-like setting, wearing dark clothing and gold chains. The photo is credited to Jaimie Trueblood/AP. The author's name, Alex Hern, is visible at the bottom of the article snippet.

Facebook

Facebook's 'ethnic affinity' advertising sparks concerns of racial profiling

Advertisers can target African American-, Asian American- and Hispanic-affiliated groups through the site



From left, Aldis Hodge, Neil Brown Jr, Jason Mitchell, O'Shea Jackson Jr, and Corey Hawkins in a scene from the film, Straight Outta Compton. Photograph: Jaimie Trueblood/AP

Alex Hern

Facebook Ethnic Affinity

1. Used for movie advertising.

2. Studied by the "Center for Democracy and Technology" and Berkeley.



home / blog / how does the internet know your race?



ALETHEA LANGE

GUEST POST

SHARE POST



How does the internet know your race?

SEPTEMBER 07, 2016 | [Privacy & Data](#)

This post co-authored by Ali Lange and Rena Coen.

"The right message, to the right user, at the right time," is the gold standard for advertisers. Entire industries, including internet [empires](#), are built on the foundation of advertising dollars, and targeted advertising allows companies to connect people with content in a very granular way. Many of the ads you see online are tailored based on the information you share, knowingly or unknowingly. Your personal data feeds into a multi-billion dollar industry of profiling and targeted advertising that includes not only information you shared directly, but also characteristics that are gleaned by analyzing aggregate data and behavior.

Your race is among many characteristics that can be inferred and used to serve you personalized content. In a 2014 [report](#), the FTC described a handful of the categories used by data brokers which included "potentially sensitive categories ... such as 'Urban Scramble' and 'Mobile Mixers', both of which include a high concentration of Latinos and African Americans with low incomes." This practice makes people uncomfortable despite its widespread and longtime use in advertising, both online and off. Recent [research](#) by CDT and a team at the University of California Berkeley show that this

Source: <https://cdt.org/blog/how-does-the-internet-know-your-race/>

Facebook Ethnic Affinity

1. Used for movie advertising.
2. Studied by the "Center for Democracy and Technology" and Berkeley.
3. Potential violation of the "Fair Housing Act".



David Sleight/ProPublica

Imagine if, during the Jim Crow era, a newspaper offered advertisers the option of placing ads only in copies that went to white readers.

That's basically what Facebook is doing nowadays.

Talk Focus

Do Facebook users receive ads for different products based on their ethnic affinity or other categorizations?

Studying the black-box using advertiser tool

1. Facebook provides little information about “Ethnic Affinity”.
2. Most info is provided through a Facebook tool (Audience Insight).
3. Users can’t declare an Ethnic Affinity.
4. They can’t edit their Ethnic Affinity.

The screenshot displays the Facebook Audience Insights interface. On the left is a sidebar for 'CREATE AUDIENCE' with various filters like Location (United States), Age and Gender, Interests, Connections, Pages, Advanced, Behaviors, Language, Relationship Status, Education, Work, Financial, Home, and Market Segments. The main area shows a 'New Audience' of 25m-30m monthly active people in the United States. It includes tabs for Demographics, Page Likes, Location, Activity, Household, and Purchase. The 'Page Likes' tab is active, showing a list of top categories and a table of relevant Facebook pages.

Top Categories

Rank	Category	Page
1	Health/Wellness	BlackDoctor.org
2	Actor	Tracee Ellis Ross · Angela Bassett
3	Author	Maya Angelou · Zane
4	Health/Beauty	My Black is Beautiful · Hairfinity Hair Vitamins
5	News/Media	Hunto.com
6	Actor/Director	Taraji P. Henson · Sanaa Lathan · Martin Lawrence · Jada Pinkett Smith
7	Musician/Band	Fantasia · Monica · K. Michelle · Miss Jill Scott · Kandi Burruss · Mary J. Blige
8	Public Figure	Rickey Smiley Official FanPage · Mike Epps · Jamie Foxx · Meagan Good
9	Comedian	Kevin Hart · D.L. Hughley · Michael Blackson
10	TV Show	The Game on BET · Love and Hip Hop · TINY & TOYA · Empire

Page Likes
Facebook Pages that are likely to be relevant to your audience based on Facebook Page likes.

Page	Relevance	Audience	Facebook	Affinity
Taraji P. Henson	1	3.3m	4m	5.3x
Fantasia	2	3m	3.6m	5.4x
Sanaa Lathan	3	3m	3.6m	5.3x
Monica	4	2.8m	3.6m	5.1x
Tyler Perry	5	4.4m	8.1m	3.5x
The Game on BET	6	2.9m	4.1m	4.8x
Rickey Smiley Official FanPage	7	2.3m	2.6m	5.6x
K. Michelle	8	2.4m	3m	5.2x
Martin Lawrence	9	3.3m	5.2m	4.1x

Methodology

1. First known-study of advertising targeted using Facebook ethnic affinities (African American, Asian American, Hispanic American)
2. For each “Ethnic Affinity”, retrieve the most relevant pages (according to Audience Insight).
3. Create 20 accounts for each “Ethnic Affinity” group and like 10 random pages from that group’s most relevant pages.
4. Create 20 accounts for a control group and like 10 random pages from the most popular Facebook pages.
5. Collect and analyze the ads shown to each account.

Most relevant pages «Asian American»

Page Likes

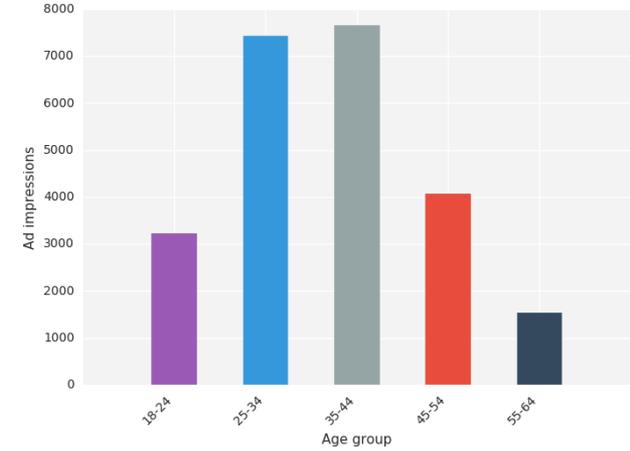
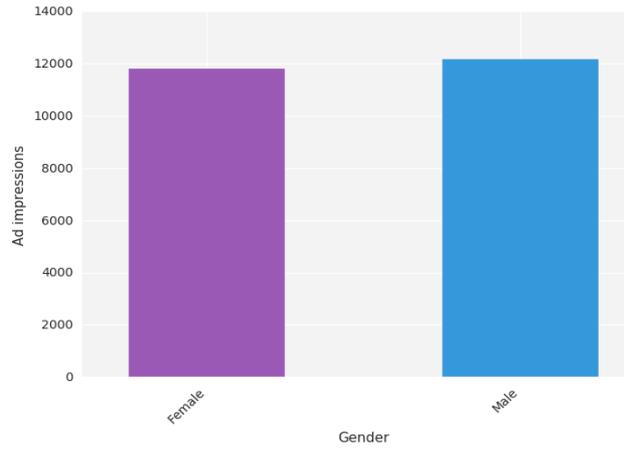
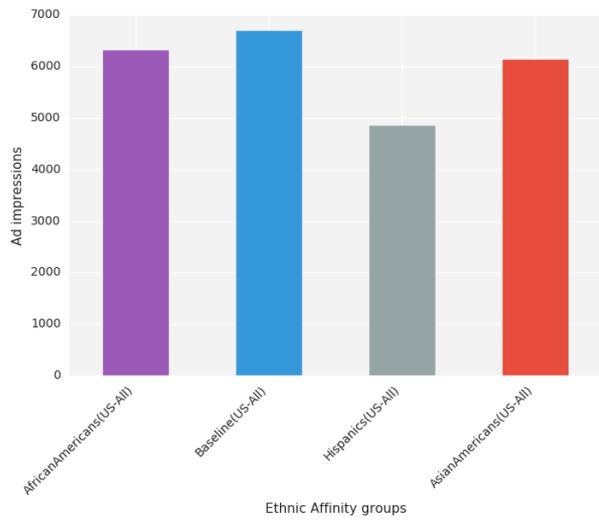
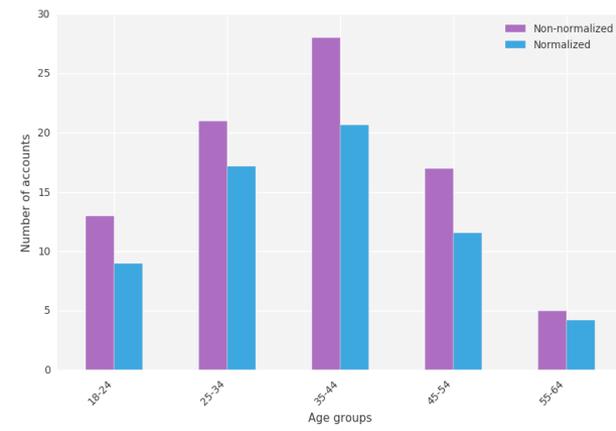
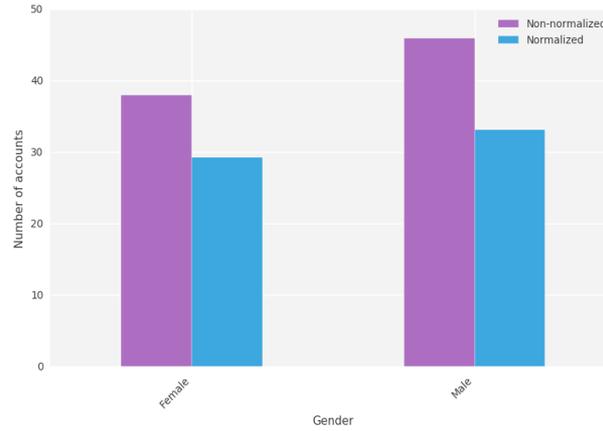
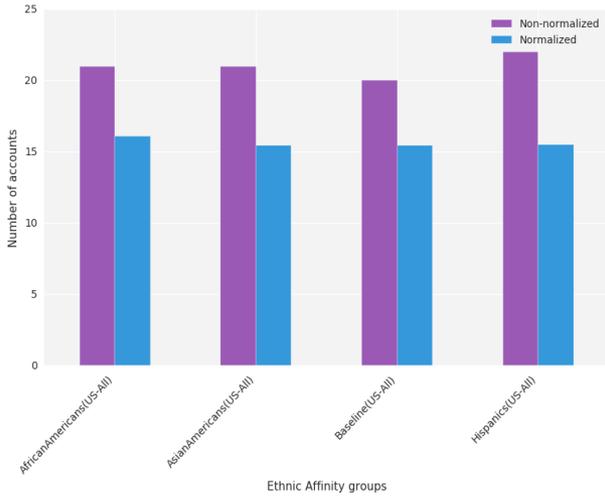
Facebook Pages that are likely to be relevant to your audience based on Facebook Page likes.

Page	Relevance ⁱ ▼	Audience	Facebook	Affinity ⁱ
ABS-CBN News	1	177.3K	220.4K	31x 
Eat Bulaga	2	150.7K	162.7K	35.7x 
ABS-CBN	3	137.7K	158.3K	33.5x 
GMA News	4	139.4K	179.2K	29.9x 
Definitely Filipino	5	131.5K	170.2K	29.8x 
Marian Rivera	6	125.4K	155.9K	31x 
BIGBANG	7	180.7K	333.7K	20.9x 
Lee Minho (이민호)	8	153.5K	250.2K	23.6x 
Angel Locsin	9	127.4K	183.1K	26.8x 
Vice Ganda	10	112.8K	146.9K	29.6x 

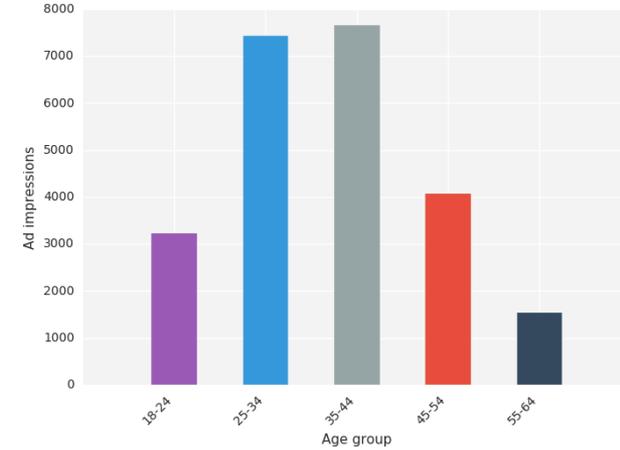
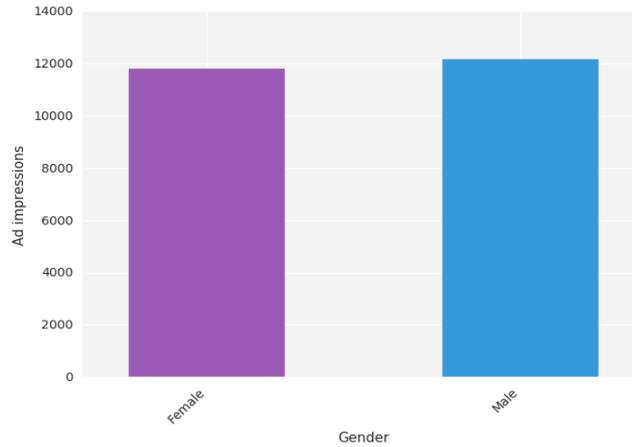
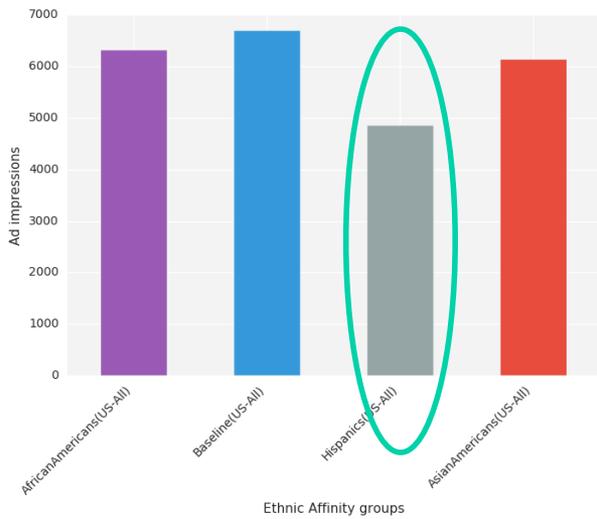
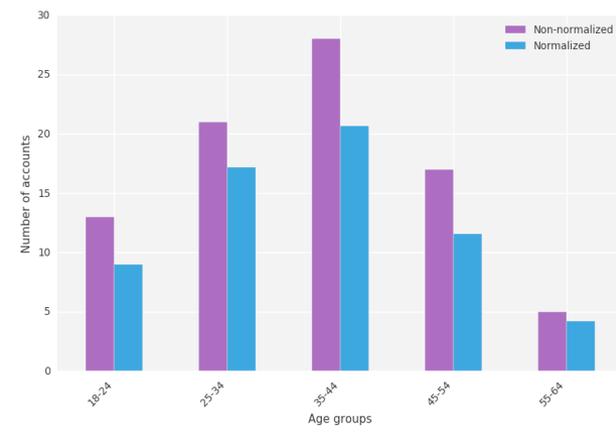
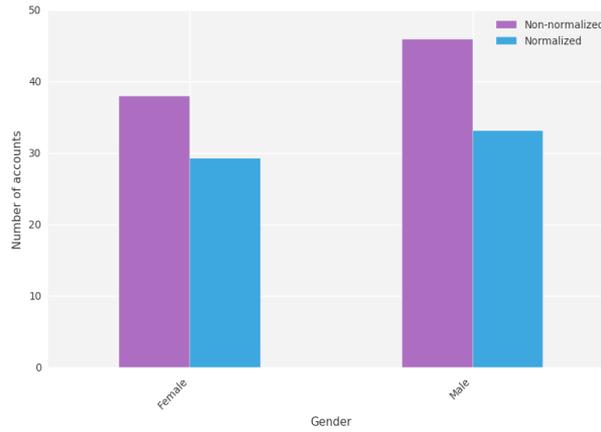
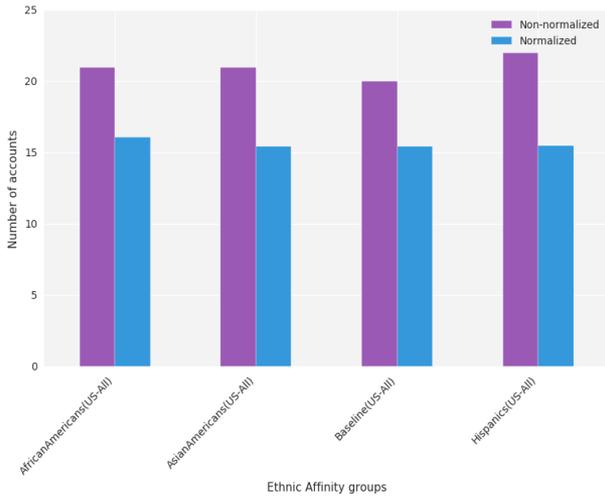
About the accounts

1. The attributes (age, gender, ethnic affinity, liked pages) of the accounts were randomized.
2. Unfortunately some of the accounts were disabled.
3. Additionally, the accounts started seeing ads at different times during the experiment
4. This might impact our ability to detect relationships between ads and certain populations

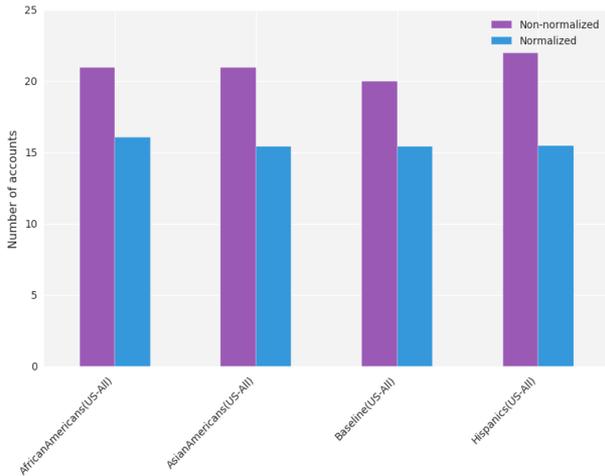
First glance at the data



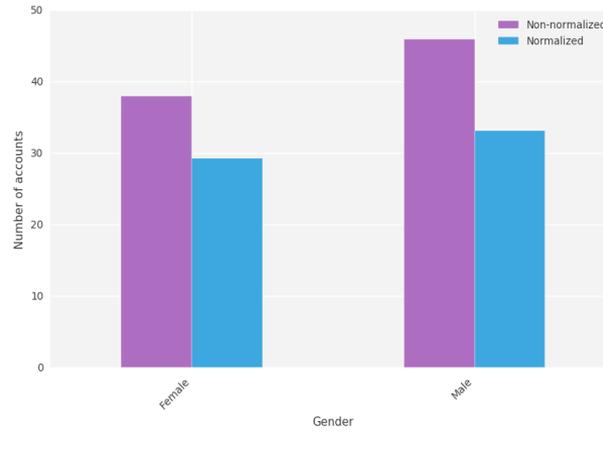
First glance at the data



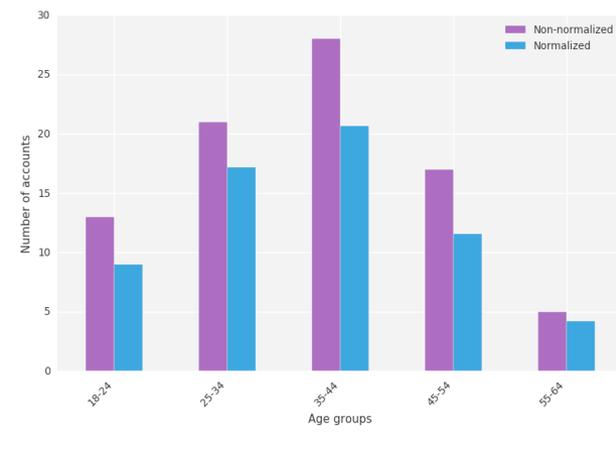
First glance at the data



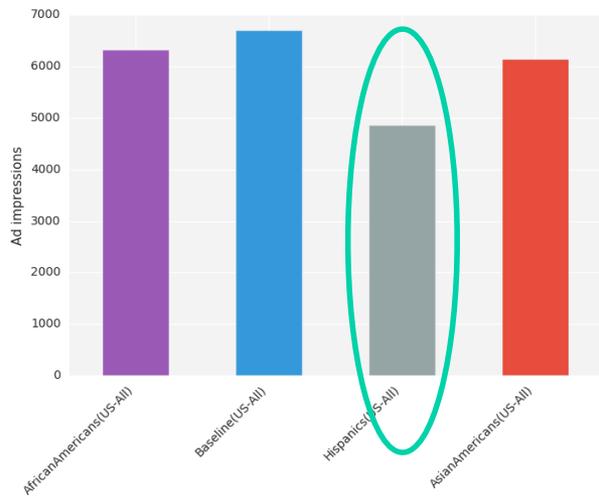
Ethnic Affinity groups



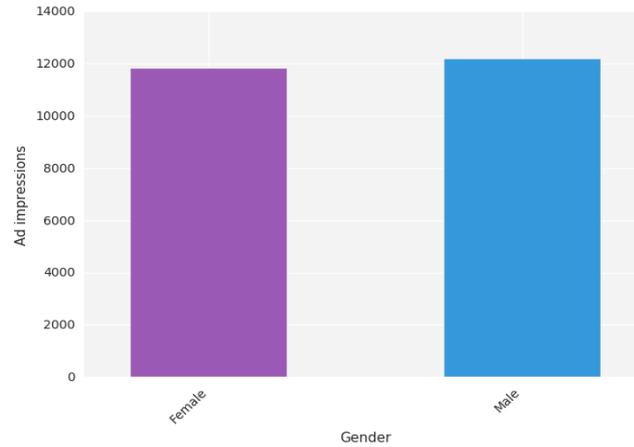
Gender



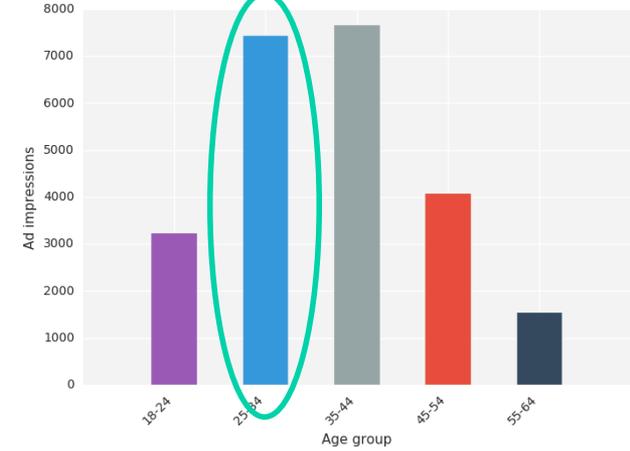
Age groups



Ethnic Affinity groups



Gender



Age group

Causal link for some of them

Facebook Ad Id	Ethnic Affinity	P-value	Ad Text
6051326544481	AfricanAmericans(US-All)	< 0.0001	Fashion Mia fashionmia.com Your Picks: Top-Reviewed Dresses Get Free Shipping Over 79 Extra10 79 Extra 10 70....
6057971189529	AfricanAmericans(US-All)	< 0.0001	Truth Examiner We Will Miss Obama! LIKE If You Agree. Like Page . 1,081,542 people like this page
6057915142329	AfricanAmericans(US-All)	< 0.0001	Truth Examiner LIKE If You Will Miss Obama! Like Page . 1,010,718 people like this page
6065040505165	AfricanAmericans(US-All)	< 0.0001	Truth Examiner We LOVE Our First Lady! LIKE If You Agree. Like Page . 971,416 people like this page
6057165160416	AsianAmericans(US-All)	< 0.05	Jewelz Santiago, Agent Accidents happen, but my team will help you get back quickly. Get to a better State®

Causal link for some of them

Facebook Ad Id	Ethnic Affinity	P-value	Ad Text
6058958774436	Hispanics(US-All)	< 0.0001	Always-on Data vzw.com/prepaid Two things that should never end: the holidays and data. 5 GB plan for \$50/mo.
6058959093236	Hispanics(US-All)	< 0.0001	10 GB plan for \$70/mo vzw.com/prepaid Unlimited talk and text to Mexico, so you can send holiday wishes to your entire family.
6058959090636	Hispanics(US-All)	< 0.0001	Always-on Data vzw.com/prepaid Share holiday moments with friends and family. 5 GB plan for \$50/mo.
6058087702636	Hispanics(US-All)	< 0.0001	Always-on Data. vzw.com/prepaid Stay connected to your family and friends without breaking the bank, even when they are in...
6058087718436	Hispanics(US-All)	< 0.0001	Verizon Prepaid. vzw.com/prepaid Bienvenido a Always-on Data so you always have data. Talk, text and stream starting at jus...
6053515579315	Hispanics(US-All)	< 0.0001	The Summer of Audi audiooffers.com” Make waves with the versatile Q3. Explore current summer offers.

Causal link for some of them

Facebook Ad Id	Ethnic Affinity	P-value	Ad Text
6058087712036	Hispanics(US-All)	< 0.001	Always-on Data. vzw.com/prepaid My prepaid is better than yours. No really, stay connected with Always-on Data so you alwa...
6058959104036	Hispanics(US-All)	< 0.05	Always-on Data vzw.com/prepaid Share holiday moments with friends and family. 5 GB plan for \$50/mo.]
6053515579715	Hispanics(US-All)	< 0.05	The Summer of Audi audioffers.com Explore current offers and get the thrilling, intelligent Q5 you\u2019ve been longing for.

Causal link for some of them

Facebook Ad Id	Gender	P-value	Ad Text
6061748679721	Female	< 0.0001	Women's Tops 3.90+ www.dresslily.com FREESHIPPING. 3.90+ www.dresslily.com FREESHIPPING. 10 OFF CODE: FB2016
6054727412972	Female	< 0.001	Financial Consultants womenadvisors.fidelitycareers.com Become a Fidelity Financial Consultant and do what you love the way you love to do it.
6064024533568	Female	< 0.01	Snowland www.greatwolf.com Share memories & save up to 30% during Snowland at Great Wolf Lodge starting 11/26.
6053851692479	Female	< 0.05	Thankful for Cupcakes! bakedbymelissa.com Leave a little room for dessert! Bite-size Apple Crisp cupcakes - limited time only.
6053851711079	Female	< 0.05	Thankful for Cupcakes! bakedbymelissa.com Leave the baking to us this Thanksgiving with bite-size Apple Crisp cupcakes!
6055242218443	Female	< 0.05	Looking for Rx savings? relpax.com With the co-pay card, eligible patients may save up to \$1200/yr. Terms & Conditions apply.
6058236486942	Male	< 0.05	Men's Sweaters: 10–30 www.dresslily.com 10OFF80 Code: NOV10. Free Shipping. Black Friday Sale. Take A Peek!

Causal link for some of them

Facebook Ad Id	Age Group	P-value	Ad Text
6058551855000	18-24	< 0.0001	Want to be a Dr. in NYC? citydoctors.com You could get a full ride to SGU's M.D. program.
6066298183723	18-24	< 0.001	Chumba Casino Play 4.0328310010764 out of 5 stars. Chumba Casino Play SPIN TO WIN! Make your day extra special. Cash out your winnings with PayPal! Play Now · 50,000 people play this
6046045118284	18-24	< 0.001	Face It Acne Study faceitstudy.com See if you qualify for an investigational research study for acne in Montclair.
23842522000870028	25-34	< 0.0001	Gatorade Elevate your training with a personalized Spotify music experience backed by science. Crea...
6067561819551	25-34	< 0.01	Kim Crawford Wines Your favorite Sauvignon Blanc wrapped (and ready to gift) for the holidays. Shop our ho... Like Page
6064090616568	35-44	< 0.05	Great Wolf Lodge® www.greatwolf.com Save up to 30% at our indoor waterpark resort during Snowland® starting on 11/26.
23842500570800256	45-54	< 0.05	Explore this Rx treatment ibrance.com © 2016 Pfizer Inc. All rights reserved. May 2016. PP-IBR-USA-0485-01]
6060067604914	55-64	< 0.05	The John W. Engeman Theater at Northport Based on the classic Disney movie, MARY POPPINS is fun for the whole family! Experience t...

Causal link Disclaimer

In the case of Ethnic Affinity causality comes with 2 disclaimers.

1. The causal link is between the ads and the list of most popular pages for that ethnic affinity group.
e.g. If the 100 most relevant pages for the African American ethnic affinity group are also highly relevant to people interested in education, then an advertiser might be targeting people interested in education instead.
2. To discover causality with ethnic affinity groups we need to condition on all pages. Unfortunately, due to the low number of accounts we need a sparse method (lasso in this case). In this case the coefficient is not the expected causal impact.

Beyond Causality

- There was also a number of ads that were highly correlated to account attributes, but for which we could not detect causality.
- Among the Facebook ads we collected there were instances of ads that were clearly misrepresenting their intention
e.g. Ads that falsely claimed famous person A died, linked to a fake news site and clicks on that site led to a form to buy a “miracle” cream for a “special price”
- There were also some instances of ads that when clicked by a normal user would lead to a different site than when clicked by a crawler