Data Demons Capstone Project

Team C470 - Data Demons

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Agenda

- ❏ Essentials

- ❏ Goals

- ❏ Key insights

- ❏ Next Steps

- ❏ Conclusion

Essentials

Context: Our client is a telecommunications company who is outsourcing their reporting needs to our team.

Objective: Help the client make better strategic decisions for future campaigns by examining data across four key areas: Location, Audience, Creative (content type), and Inventory (where ads are placed).

Goals

1. Identify and Analyze the Top 10 performing **audiences** : Find the best audience using KPI's and create 3 different audience persona

2. Determine the Most Cost Effective **location** : Analyze and rank locations based on their KPI's

3. Analyze Top-Performing **Inventory** Sources: Evaluate KPIs to identify the highest-performing exchanges, enabling optimized ad placements and maximizing ROI for future campaigns

4. Identify and measure the greatest and weakest **creative** sizes: Asses Key Performance Indicators and analyse what sizes are highest and lowest performers by device, location, messaging

Key Insights

Location

Audience

Inventory

Creative

Location Analysis

Location Analysis

- Identify which are top/bottom performing states

- Identify which locations were the cost-effective
    - Performance metrics CPA, CVR, CPC, and CPM
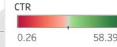   - Branding metrics CTR and Viewable impressions

CTR Performance Based on State

5 States with the highest CTR

- Florida
- Illinois
- California
- New york
- tennessee

5 states with the lowest CTR

- Kentucky
- Arkansas
- Louisiana
- Ohio
- South Carolina

Sum of CTR per state

CTR
0.26 ▬ 58.39

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Viewable impressions

Viewable Impressions by state

State

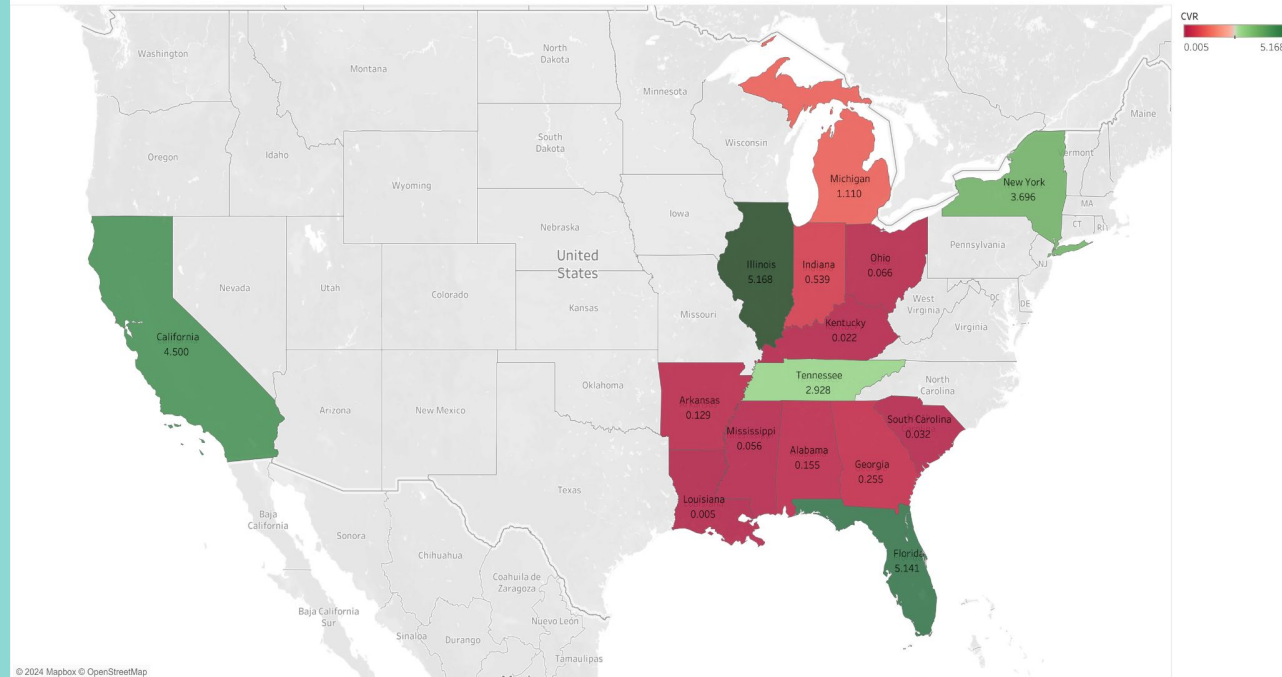| State	Viewable Impressions
Illinois	14,179,010
California	10,572,598
Florida	5,912,886
New York	5,251,481
Tennessee	3,394,431
Ohio	173,768
Kentucky	569
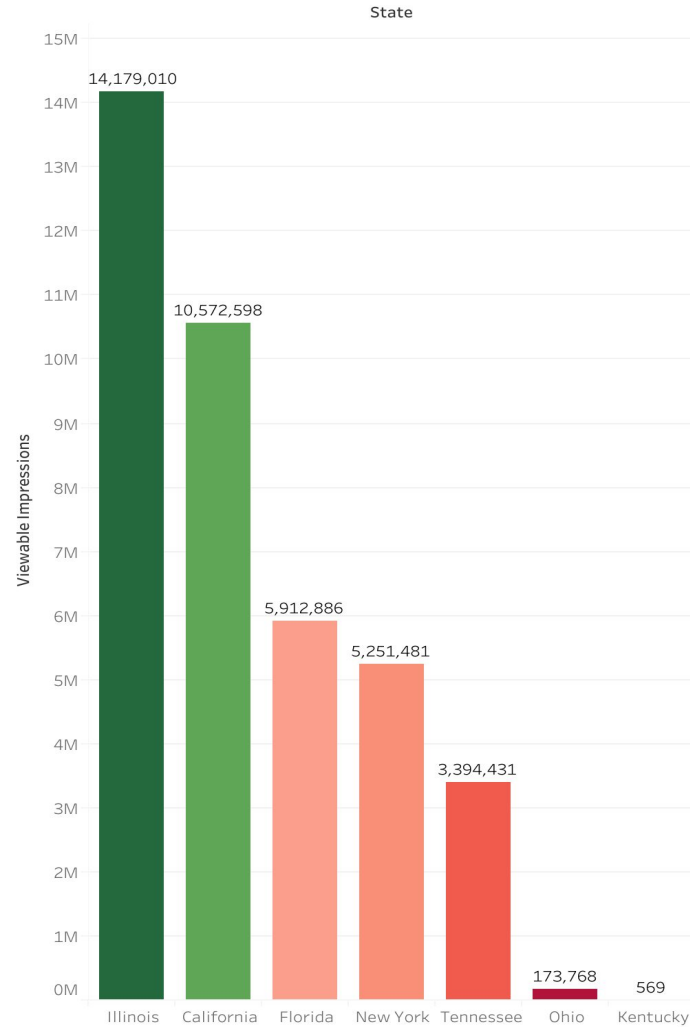
CVR Performance Based on State

5 states with the highest CVR
- Illinois
- Florida
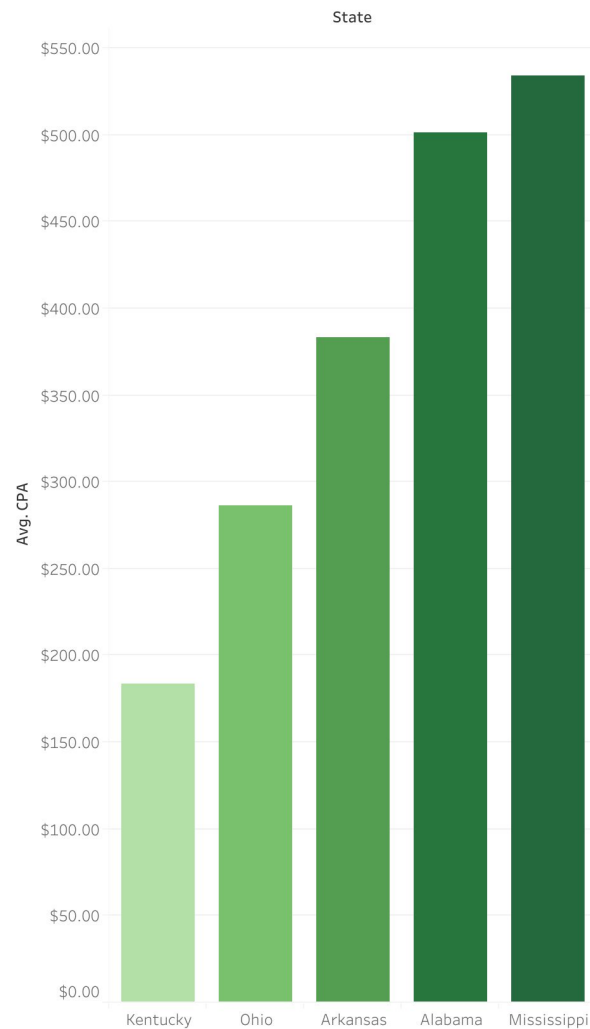- California
- New york
- Tennessee

5 states with the lowest CVR
- Kentucky
- Arkansas
- Louisiana
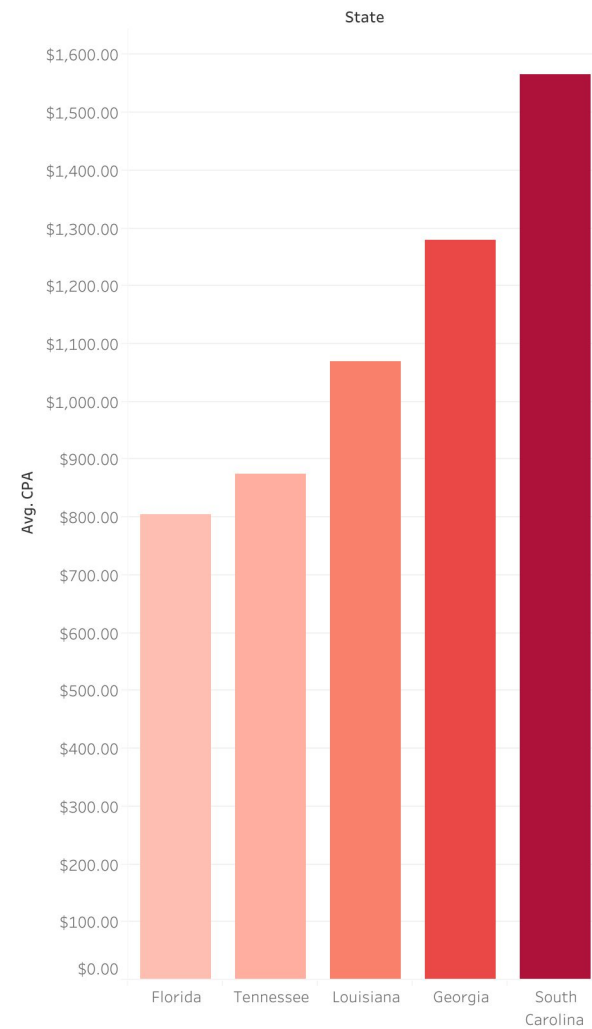- Ohio
- South Carolina

CVR performance by state

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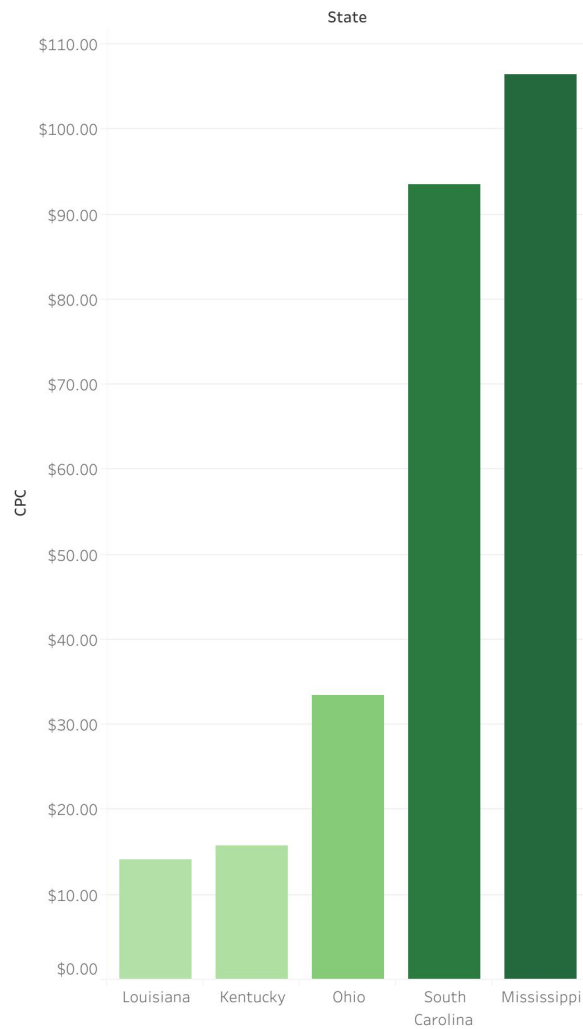
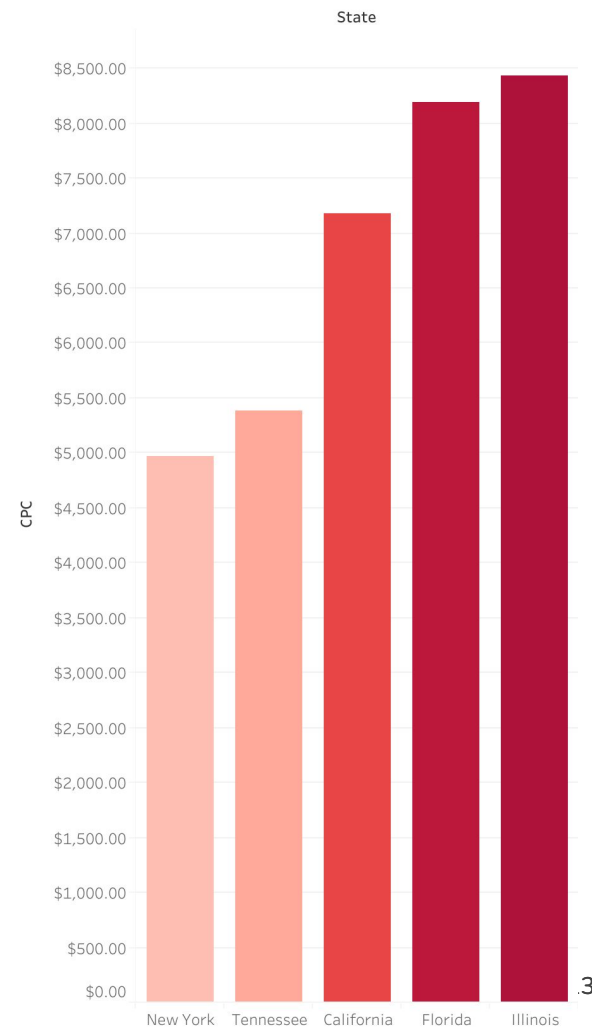# CPA Performance Based on State

5 states with the lowest CPA

State

Avg. CPA

$550.00	
$500.00	
$450.00	
$400.00	
$350.00	
$300.00	
$250.00	
$200.00	
$150.00	
$100.00	
$50.00	
$0.00	

Kentucky   Ohio   Arkansas   Alabama   Mississippi

5 states with the highest CPA

State

Avg. CPA

$1,600.00	
$1,500.00	
$1,400.00	
$1,300.00	
$1,200.00	
$1,100.00	
$1,000.00	
$900.00	
$800.00	
$700.00	
$600.00	
$500.00	
$400.00	
$300.00	
$200.00	
$100.00	
$0.00	

Florida   Tennessee   Louisiana   Georgia   South Carolina

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CPC Performance Based on State

5 states with the lowest CPC

State	CPC
Louisiana	~$14.00
Kentucky	~$16.00
Ohio	~$33.00
South Carolina	~$93.00
Mississippi	~$106.00

5 states with the highest CPC

State	CPC
New York	~$4,980.00
Tennessee	~$5,400.00
California	~$7,200.00
Florida	~$8,150.00
Illinois	~$8,430.00

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CPM

States with the lowest CPM

State

State	CPM
Ohio	~$180.00
South Carolina	~$400.00
Louisiana	~$500.00
Arkansas	~$740.00
Mississippi	~$2,260.00

5 States with the highest CPM

State

State	CPM
Tennessee	~$46,000.00
New York	~$47,500.00
Illinois	~$77,500.00
Florida	~$78,500.00
California	~$81,500.00

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Audience Analysis

Audience Analysis

- Identify which Audience segments are the highest and lowest performers
  - Performance metrics CPA, CPC, CPM
  - Branding metrics CTR, viewable impression)
- Creating three audience profiles
  - Which will be based on the best audience segments and research

Best Audiences (Lowest CPA and CTR)

1. HouseHolds with 2 Adults
2. For credit Buyer Propensity
3. Tourism -> Africa
4. Real estate> Cozy outdoor place
5. Purchasing Automobiles
6. Car Brand >Mazda
7. Loans
8. Seamless buyers Propensity
9. News and Current Events
10. NASCAR

CPA	CTR
18.47	0.0016
25.33	0.0026
33.93	0.0035
45.49	0.0029
46.45	0.0029
48.32	0.0033
54.28	0.0027
61.70	0.0025
62.38	0.0034
63.49	0.0027

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Best Viewable Impression

1. Credit and lending
2. Porsche
3. Happy Home
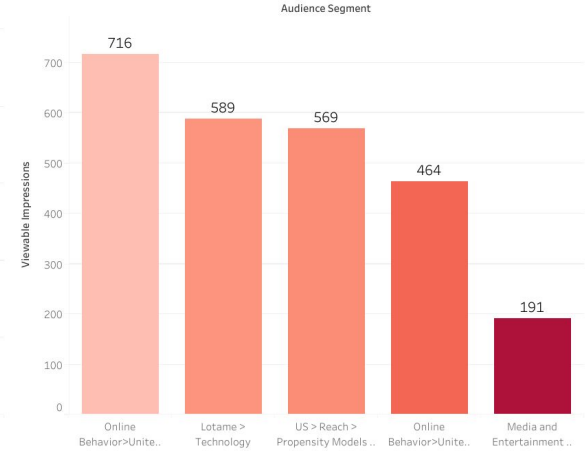4. College Graduation
5. Electric and Plug Vehicles

Best Clicks per Mille (CPM)

1. Porsche
2. Hotels & Lendings
3. Credit & Lending
4. Steam Community Market Prosperity
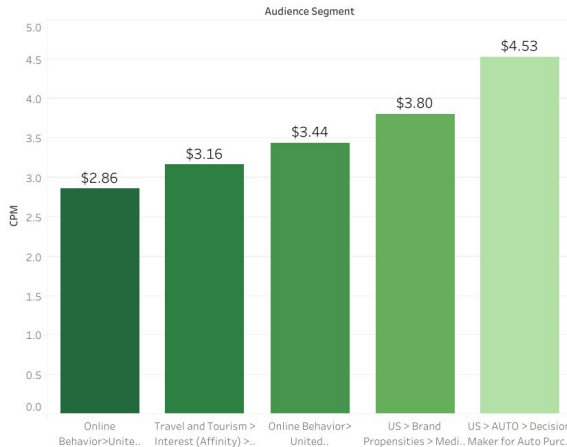5. Sole decision maker in Automobile purchases
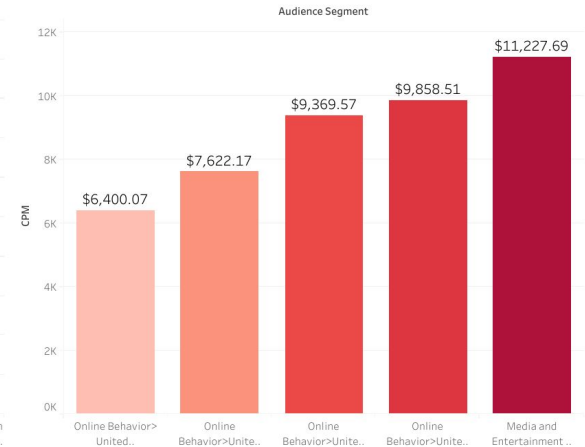
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Top 5 Audience Segments for Viewable Impresions

Audience Segment

2,338,732
2,013,324
1,155,869
1,151,776
1,135,085

Viewable Impressions

Online Behavior>Unite.. | Online Behavior>United.. | Online Behavior>United.. | Online Behavior>United.. | Online Behavior>Unite..
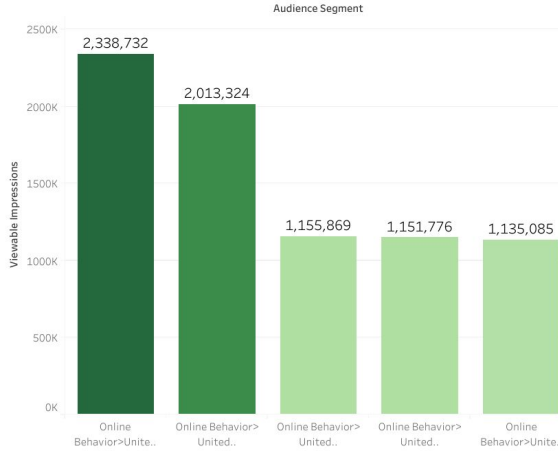
Bottom 5 Audience Segments for Viewable Impresions

Audience Segment

716
589
569
464
191

Viewable Impressions

Online Behavior>Unite.. | Lotame > Technology | US > Reach > Propensity Models .. | Online Behavior>Unite.. | Media and Entertainment

Lowest 5 Audience Using CPM

Audience Segment

$2.86
$3.16
$3.44
$3.80
$4.53

CPM

Online Behavior>Unite.. | Travel and Tourism > Interest (Affinity) >.. | Online Behavior>United.. | US > Brand Propensities > Medi.. | US > AUTO > Decision Maker for Auto Purc..

Highest 5 Audience Using CPM

Audience Segment

$6,400.07
$7,622.17
$9,369.57
$9,858.51
$11,227.69

CPM

Online Behavior>United.. | Online Behavior>Unite.. | Online Behavior>Unite.. | Online Behavior>Unite.. | Media and Entertainment ..
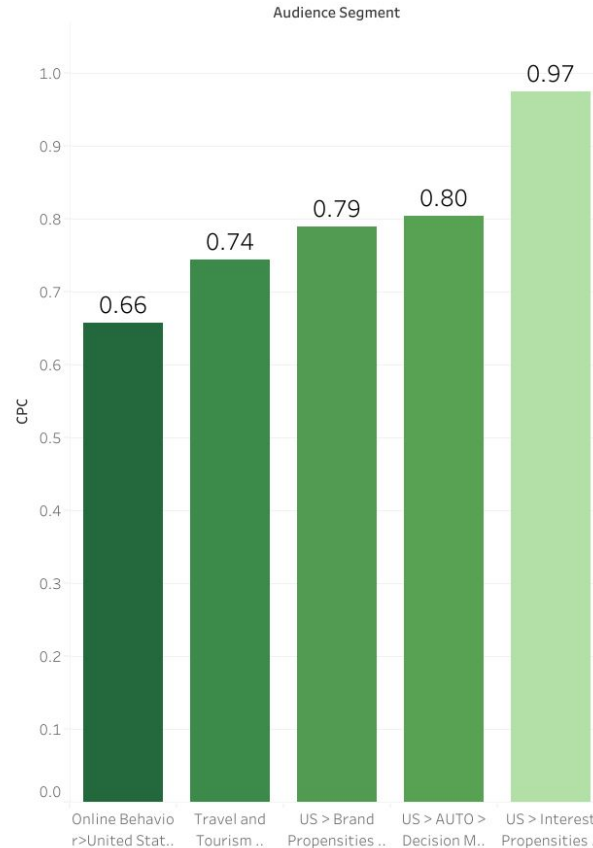
Best Cost per Click (CPC)

1. Porsche
2. Hotels and Lodging
3. Steam Community Buyer Propensity
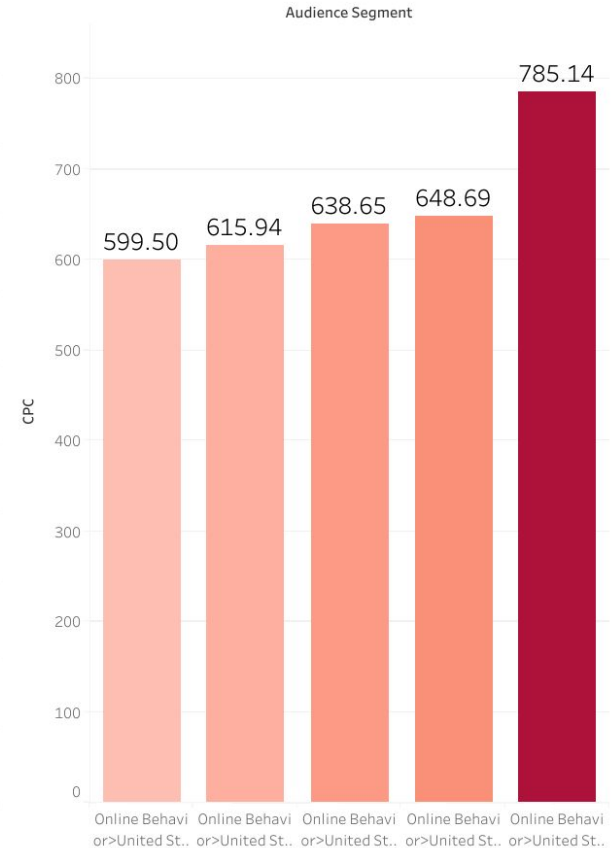4. Sole decision maker
5. Drama TV Shows and Movies

Worst Cost per Click (CPC)

1. Lakes and Rivers
2. Drug Stores
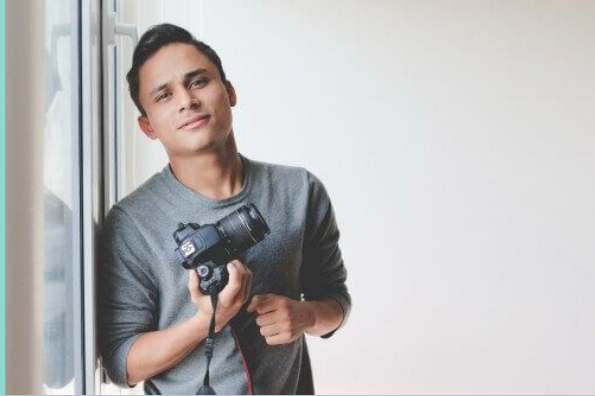3. Computers and Laptops
4. Honda Car Brands
5. Nissan Car Brands

Lowest 10 Audience Segments Using CPC

Highest 10 Audience Segments Using CPC

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Personality one

Morris Schinner

Bio:

A guy who loves to travel around the world and who wants to capture scenery. He owns a nice house in the suburbs[1]

Age: 35

Interest to buy: He wants to visit to different places around the world and take photos.

Frustrations: Picking the right Hotels and Lodges

Goals: Visit Africa

Personality Two

Horace Smith

Bio

A college graduate who's working in the financial world who used to play Rugby and Volleyball

Age: 22

Interest to buy: His interest are based on video streaming sites he watches[3]. Most likely finance/ accounting content

Frustrations: Paying off his student loans[4]

Goals: Looks to own a Mazda or a Porsche, Maintain his Job as an accountant, and looking to buy a house

Personality Three

Janie Schinner

Bio

A gardener who loves to explore and see different farms (Agritourism)

Age: 66

Interest to buy: Fashion and Clothing

Frustrations: Finding ways to grow different flowers in her home[5]

Goals: Have a nice garden in her home every year

Inventory Analysis

Inventory Analysis

- Identify which inventory sources (exchanges) yield the greatest performance in terms of:
    - Performance metrics (CPA, CVR, CPC, CPM)
    - Branding metrics (CTR, viewability, viewable impressions,etc.)

- Identify at least five different publishers (websites) whom your client should contract for a direct buy

CPA Performance Based on Exchange
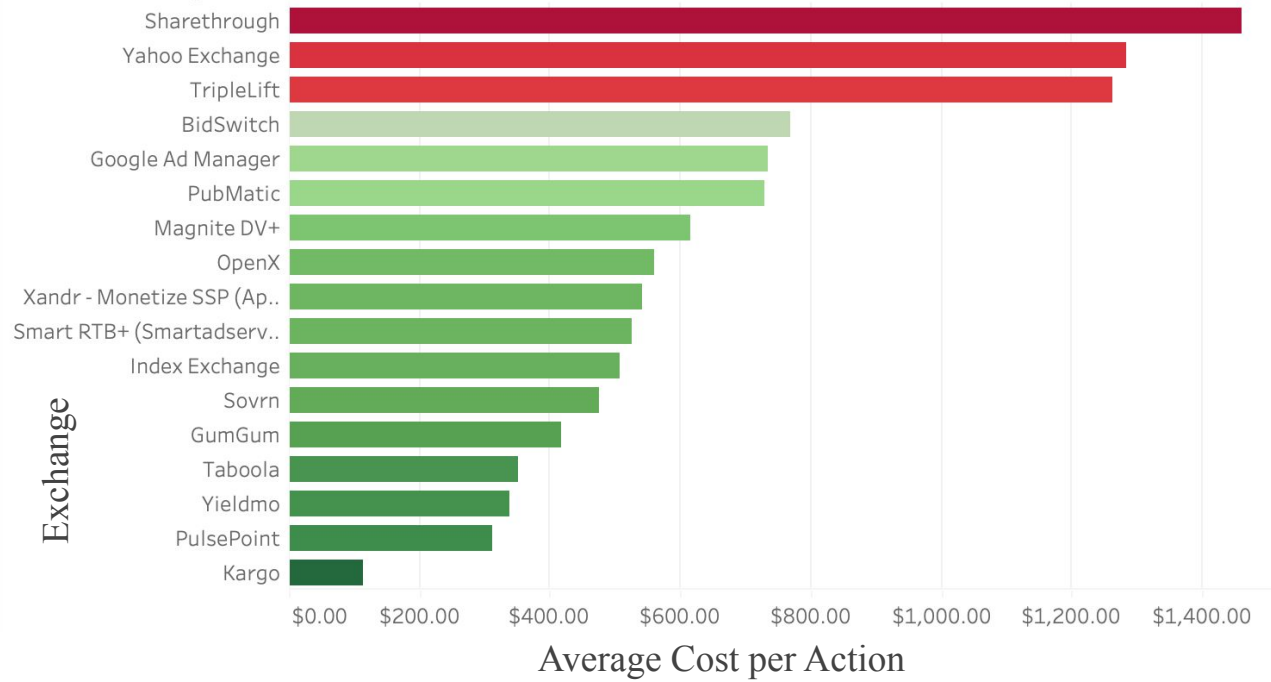
Top Exchange Performance - CPA

1. Kargo
2. Pulse Point
3. Yieldmo

CPC Performance Based on Exchange
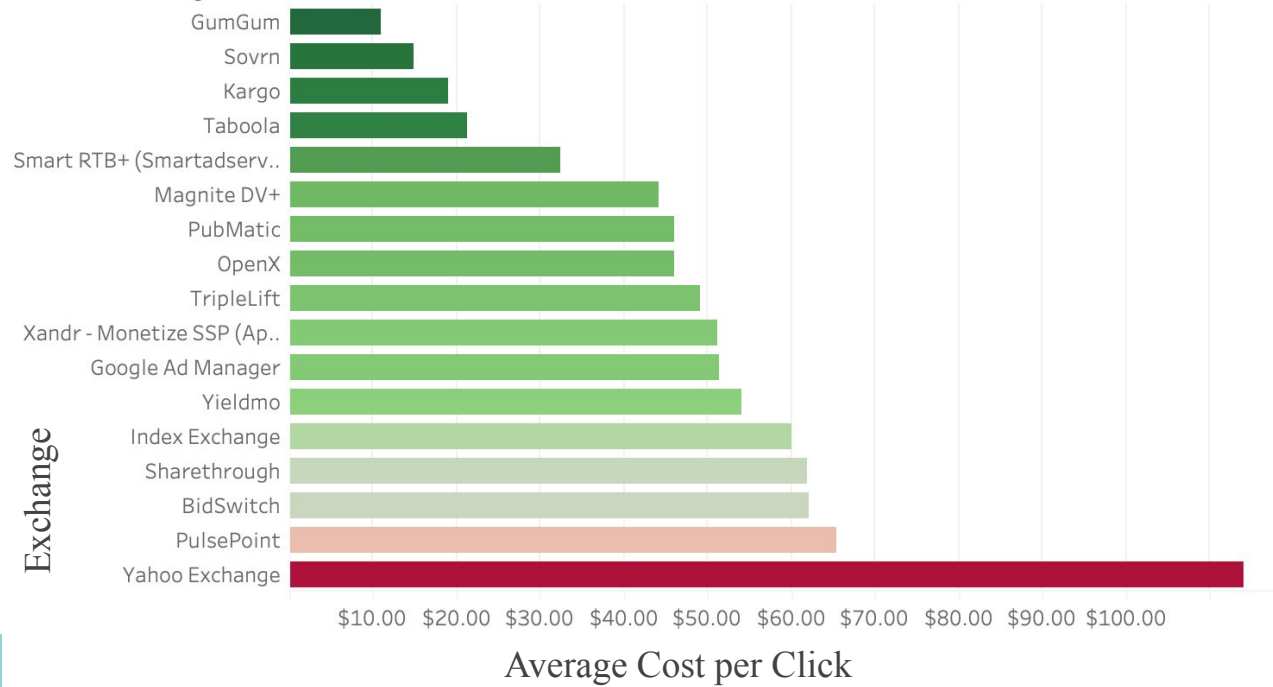
Top Exchange Performers - CPC

1. Gum Gum
2. Sovrn
3. Kargo

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CVR Performance Based on Exchange
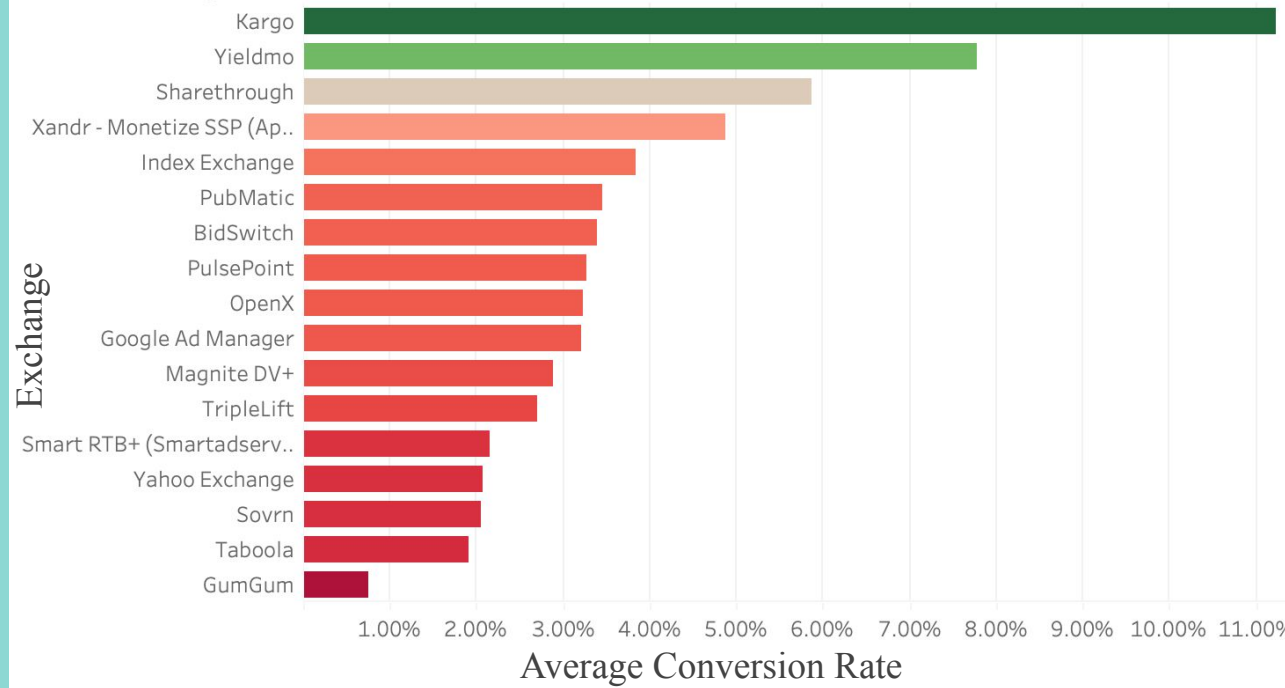
Top Exchange Performers - CVR
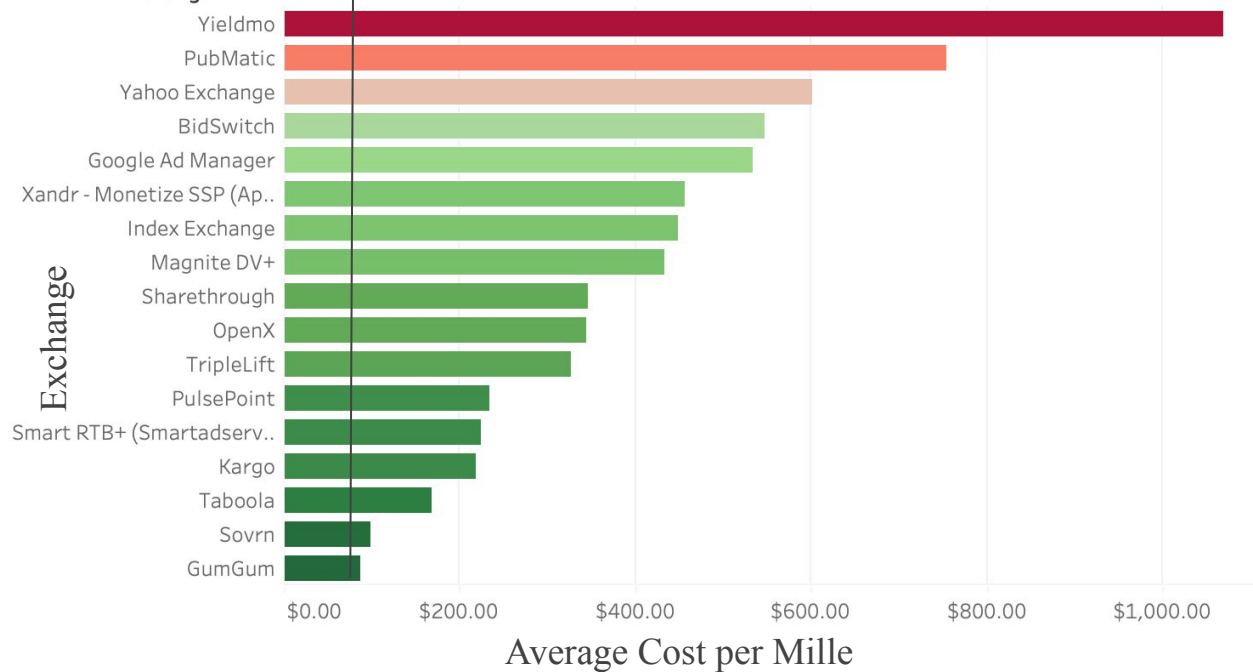
1.   Kargo
2.   Yieldmo
3.   Sharethrough

Viewability

Primary Goal: Viewability 60%
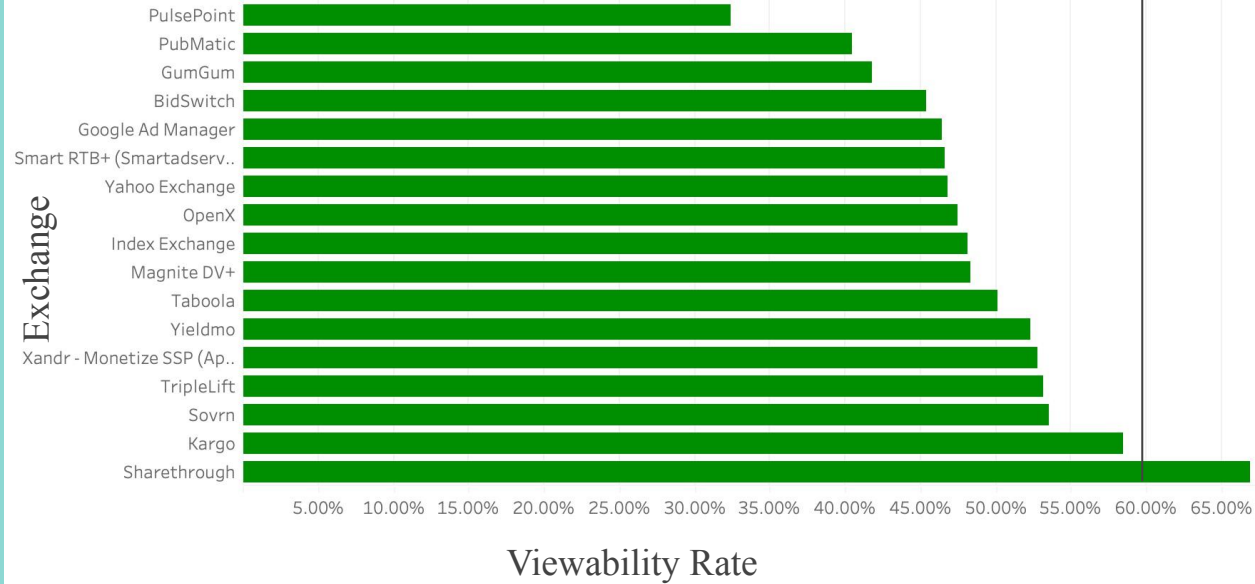
Viewability = Viewable Impressions / Total Impressions

# CPM Performance Based on Exchange

Secondary Goal - $80 CPM

Top Exchange Performers - CPM

1. GumGum
2. Sovrn
3. Taboola

Measurable vs Viewable Impressions

Viewable impressions are ads that meet visibility standards and are likely seen by users, whereas measurable impressions refer to ads where viewability can be assessed, regardless of whether the ad was actually visible to the user

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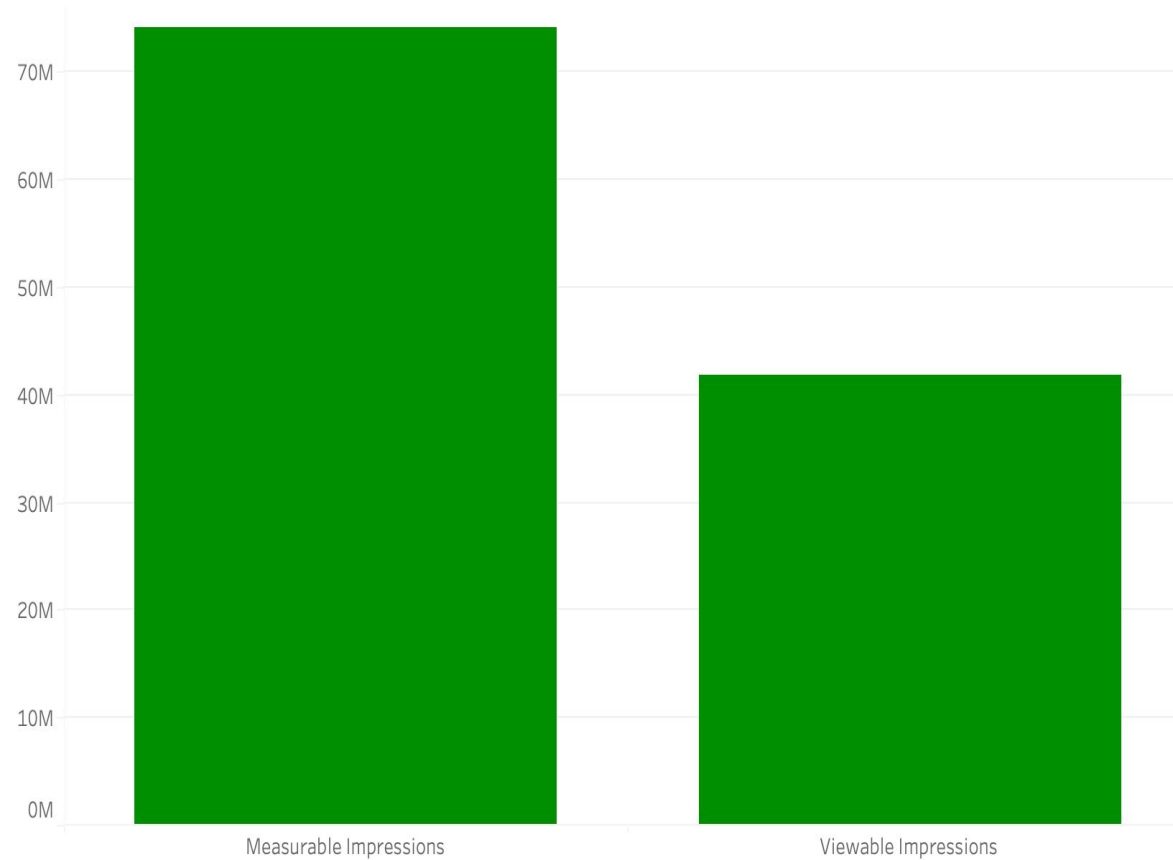
Buyout Performance Based on APP/URL

App/URL

Average Conversion Rate
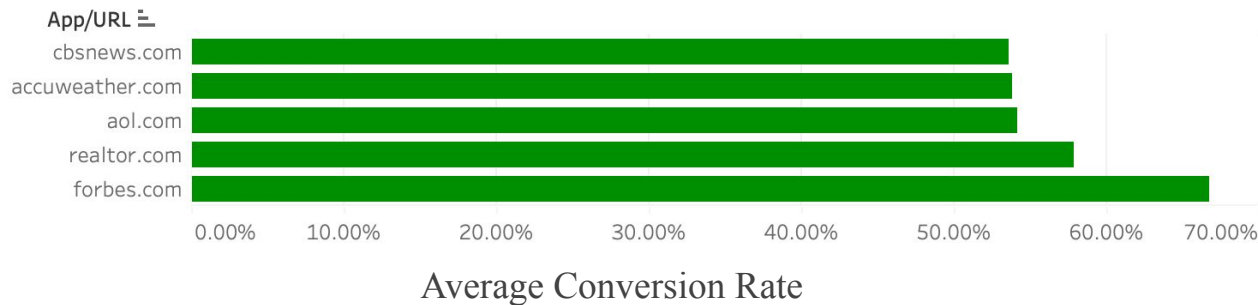
Top 5 Publishers for Buyout
1. forbes.com
2. realtor.com
3. aol.com
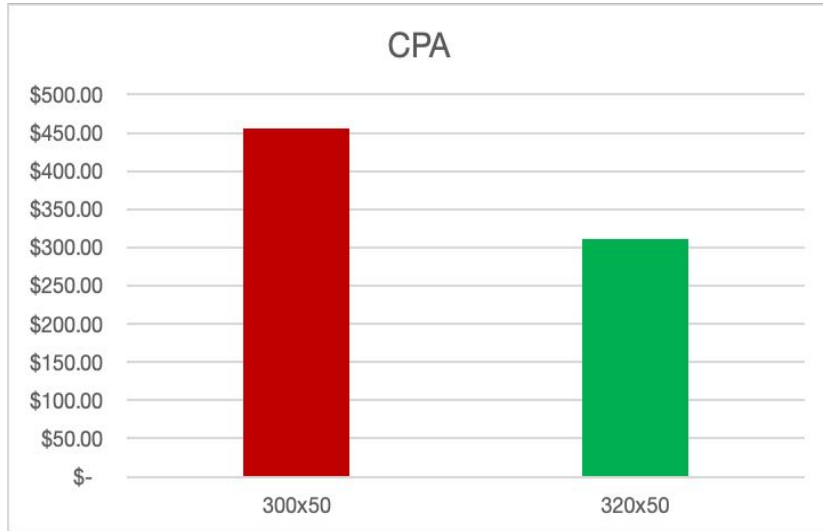4. accuweather.com
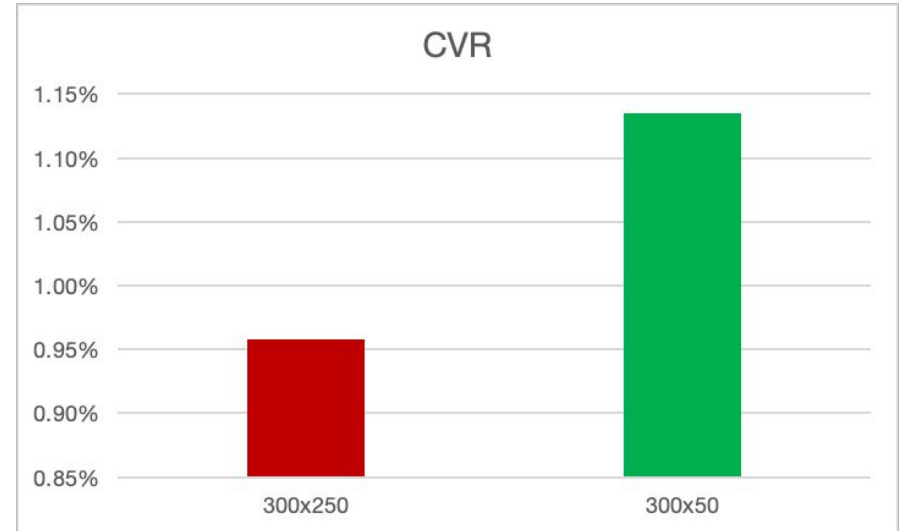5. cbsnews.com

Creative Analysis

Creative Analysis

- Identify which creative sizes are the highest and lowest performers
  - Performance metrics CPA, CVR, CPC, CPM
  - Branding metrics CTR, viewability, viewable impression
- What sizes are highest and lowest performers
  - Device
  - Location
  - Messaging

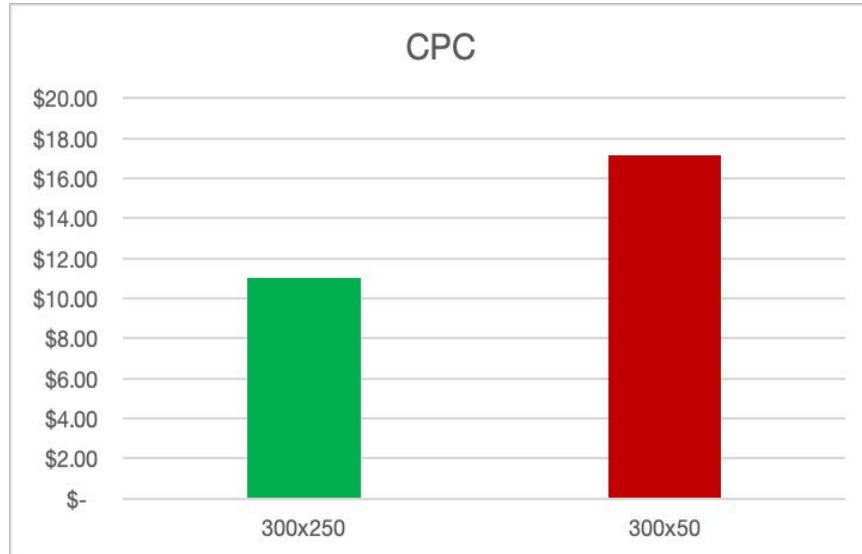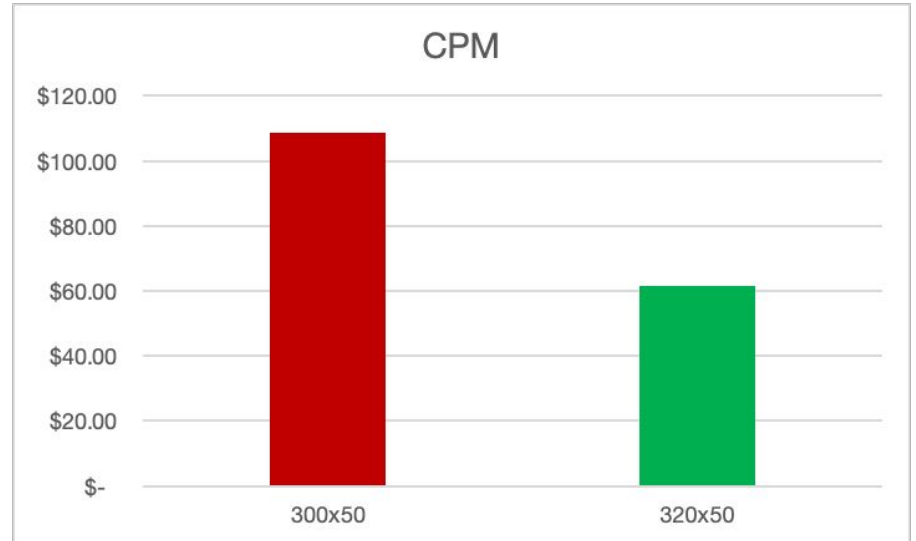# Key Performance Indicators

Cost Per Action

Conversion Rate

Key Performance Indicators
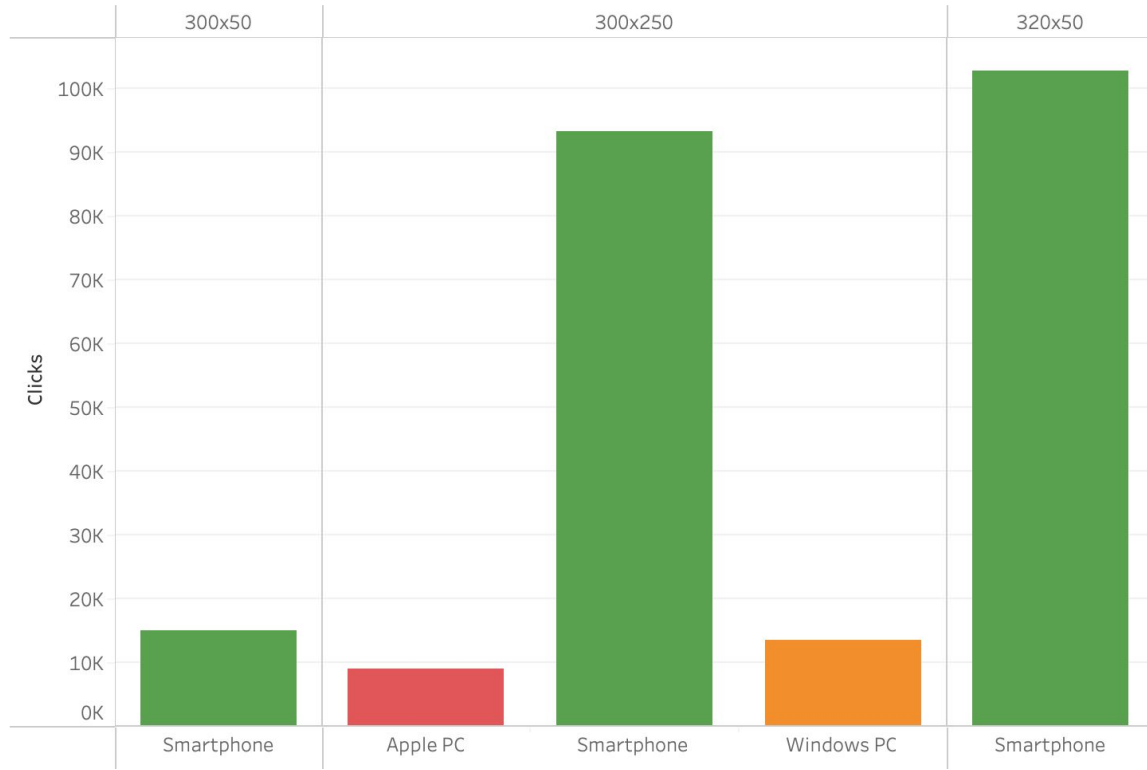
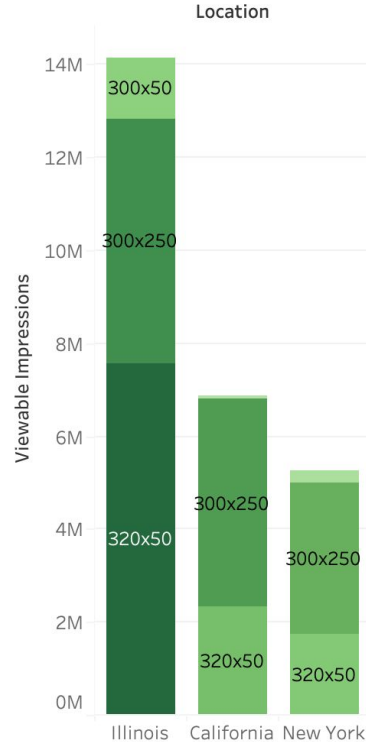## Cost Per Click

Cost Per Mille

Device Performance
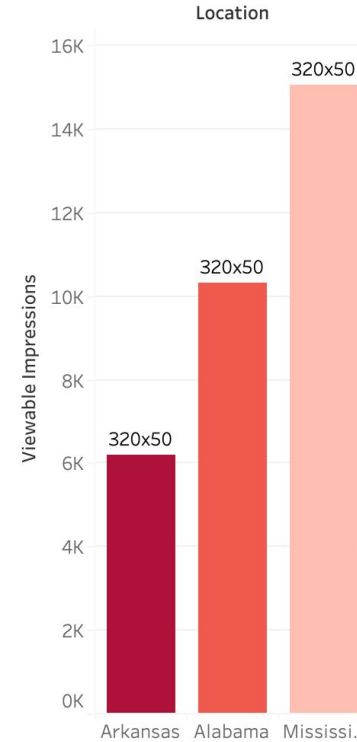
Device vs Creative Size

Location Performance

Top 3 Locations

Bottom 3 Locations

Messaging Performance

300x250
Subscribe Today - 10% Discount
0.3567

300x250
Sign up Today - 10% Off
0.3007

300x50

300x250
10% Discount - Ends 6/1
0.3437

300x250
Sign up Now - 10% Off
0.2746

300x50
Sign up
Today -
10% Off
0.0576

320x50
Subscribe Today - 10% Discount
0.3744

320x50
Sign up Today - 10% Off
0.2648

320x50
10% Discount - Ends
6/1
0.2182

300x50
10%

320x50
Sign up Now - 10% Off
0.2402

Creative Size:	**300x50**
Creative Messaging:	**Sign up Now - 10% Off**
CTR:	**0.0306**

Now -

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Next Steps

Spatial:
Target areas such as Ohio and Kentucky that were the best cost-effective. We should relook the campaign strategies to increase users who come across these ads

Audience:
Create strategies to focus on managers, shopping mall buyers, or topics arts and entertainment and video game software[2]

Inventory:

Yahoo Exchange has the highest CPC, they should update ads frequently
Sharethrough has the highest CPA and second highest CTR, they should rematch specific keywords

Creative:

Because the 320x50 ad size was the best performer across CPA, CPM, CPC we should aim to target audience through ads via smartphone with a creative size of 320x50

Thank You!

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Appendix

https://www.afterdigital.co.uk/insights-and-updates/blog/10-tips-to-decrease-your-cost-per-acquisition-cpa

https://www.axios.com/2023/11/20/american-housing-market-older-homeowners-2023

https://www.collegeaffordability.urban.org/covering-expenses/borrowing/#:~:text=Many%20students%20borrow%20to%20fund,by%20the%20time%20they%20graduate.

https://www.datafeedwatch.com/blog/lower-cost-per-click-google-ads

https://www.extension.purdue.edu/extmedia/EC/EC-814-W.pdf

https://www.forbes.com/councils/forbesbusinesscouncil/2024/01/09/gaming-is-growing-and-web3-is-coming-with-it/

https://www.unwto.org/africa/africa-news-issue-23#:~:text=International%20tourism%20in%20Africa%20recovered,pre-pandemic%20levels%20in%202023&text=Africa%20recovered%2096%25%20of%20pre-crisis%20arrivals%20in%20January-,robust%20demand%20from%20European%20markets.

https://www.yellowbrick.co/blog/entertainment/crucial-video-streaming-statistics-key-insights-and-trends#:~:text=Understanding%20the%20demographics%20of%20video,resonates%20with%20their%20target%20audience.