



# CARD Advertising



## C343 Fall 2023

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# Introduction

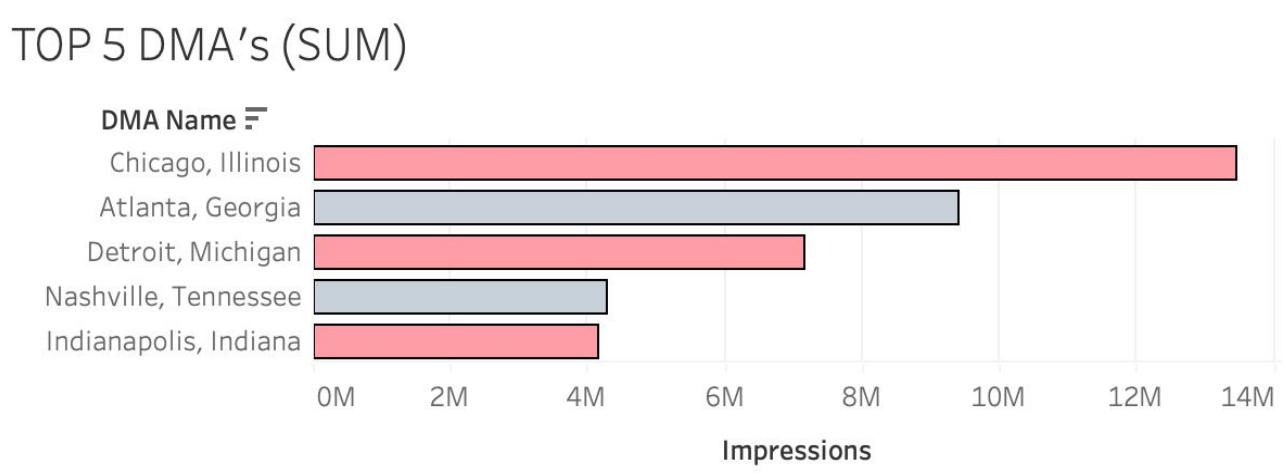
- **CARD Advertising**
  - Key Stakeholders: Christian, Ana, Reina, Derrick
- **Objectives**
  - Identify top performing markets
  - Identify top performing devices and operating systems
  - Identify top performing creative format sizes
  - Identify top performing inventory sources
  - Identify how to generate more organic traffic
- **Key Performance Indicators**
  - Impressions, Clicks, Conversion Rate (CVR), Click Through Rate (CTR), Cost Per Click (CPC), Cost Per Acquisition (CPA), Cost Per Mille (CPM)

01

# Device/Location Analytics & Key Insights



# Top 5 Performing DMA's



Chicago, Illinois.....13,437,041

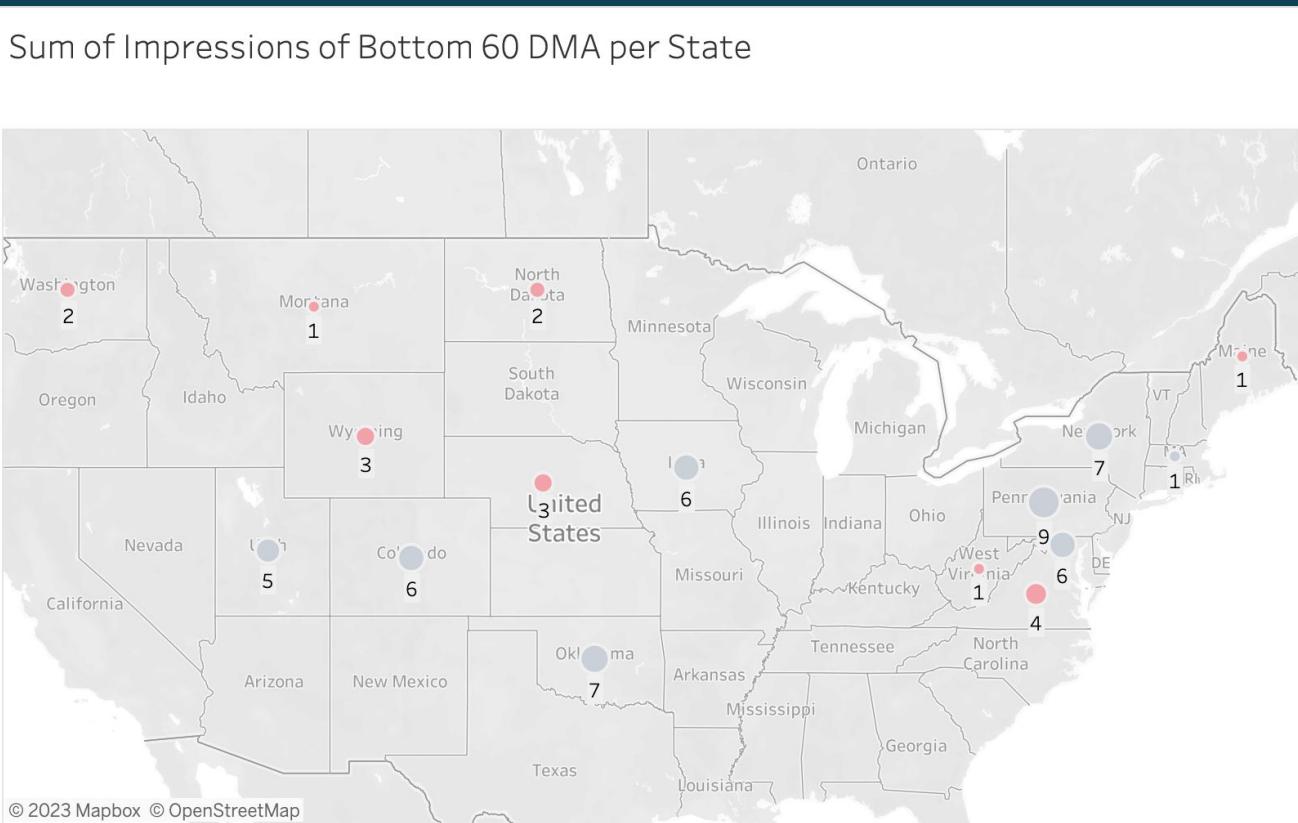
Atlanta, Georgia.....9,309,910

Detroit, Michigan.....7,140,408

Nashville, Tennessee.....4,279,257

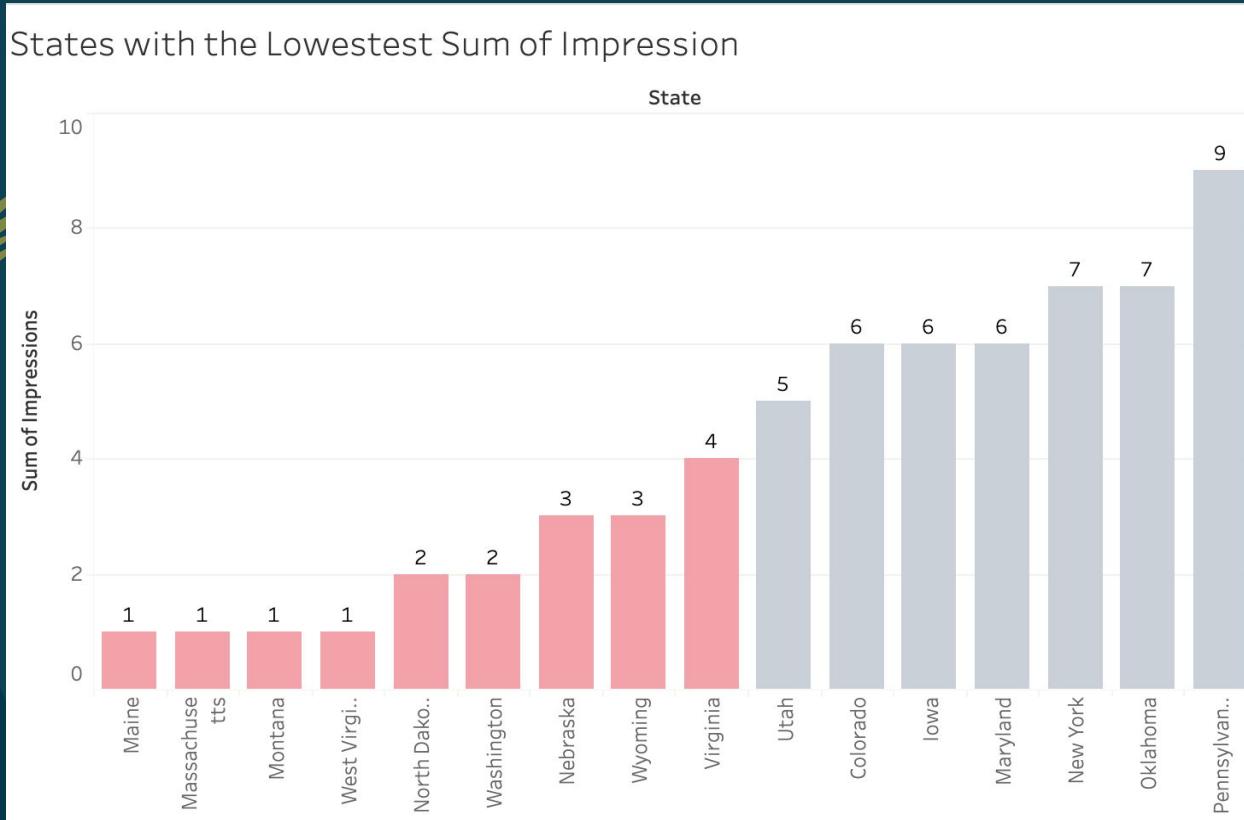
Indianapolis, Indiana.....4,141,746

# Bottom 60 Performing States



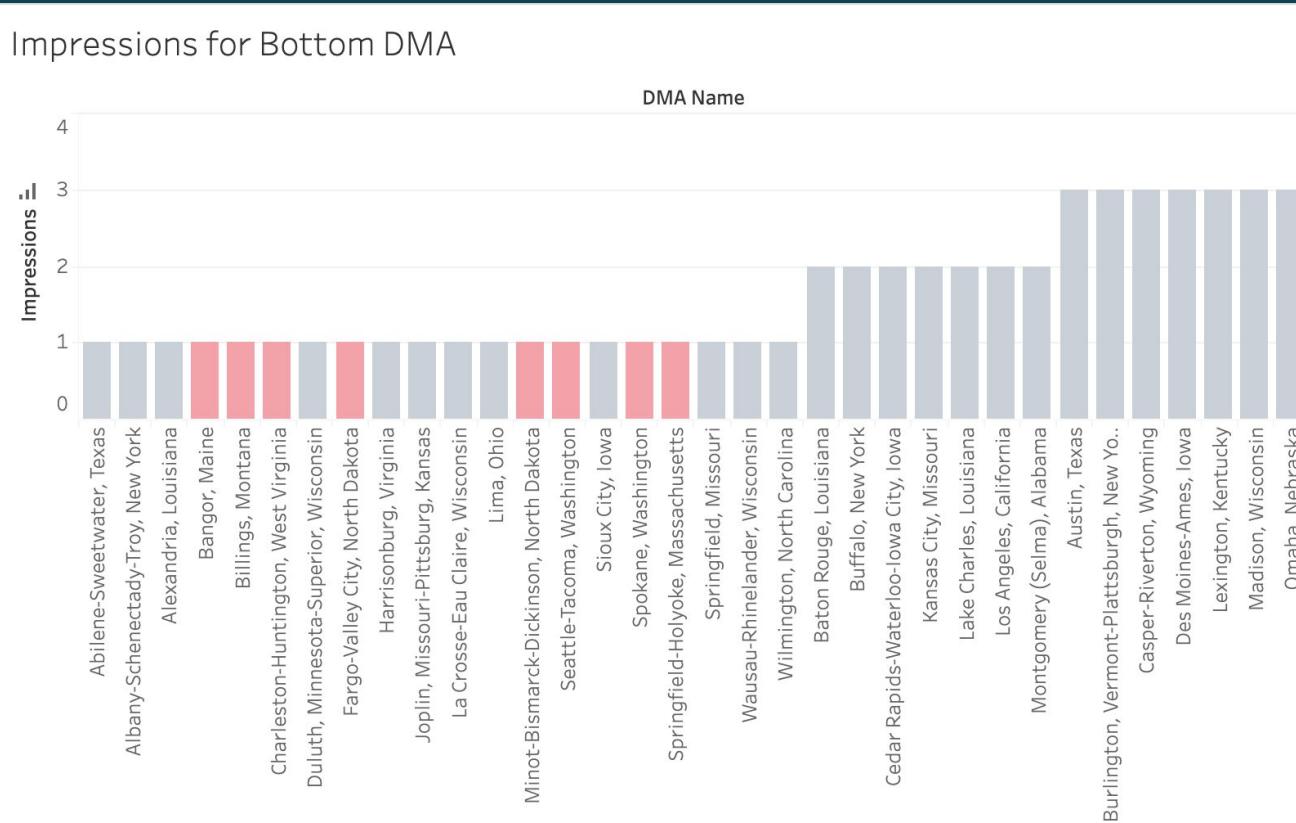
- Ex: North Carolina (35 DMA, 6 in Bottom 60)
- Lower performing DMA and States are located in northern midwest

# Bottom 60 Performing States



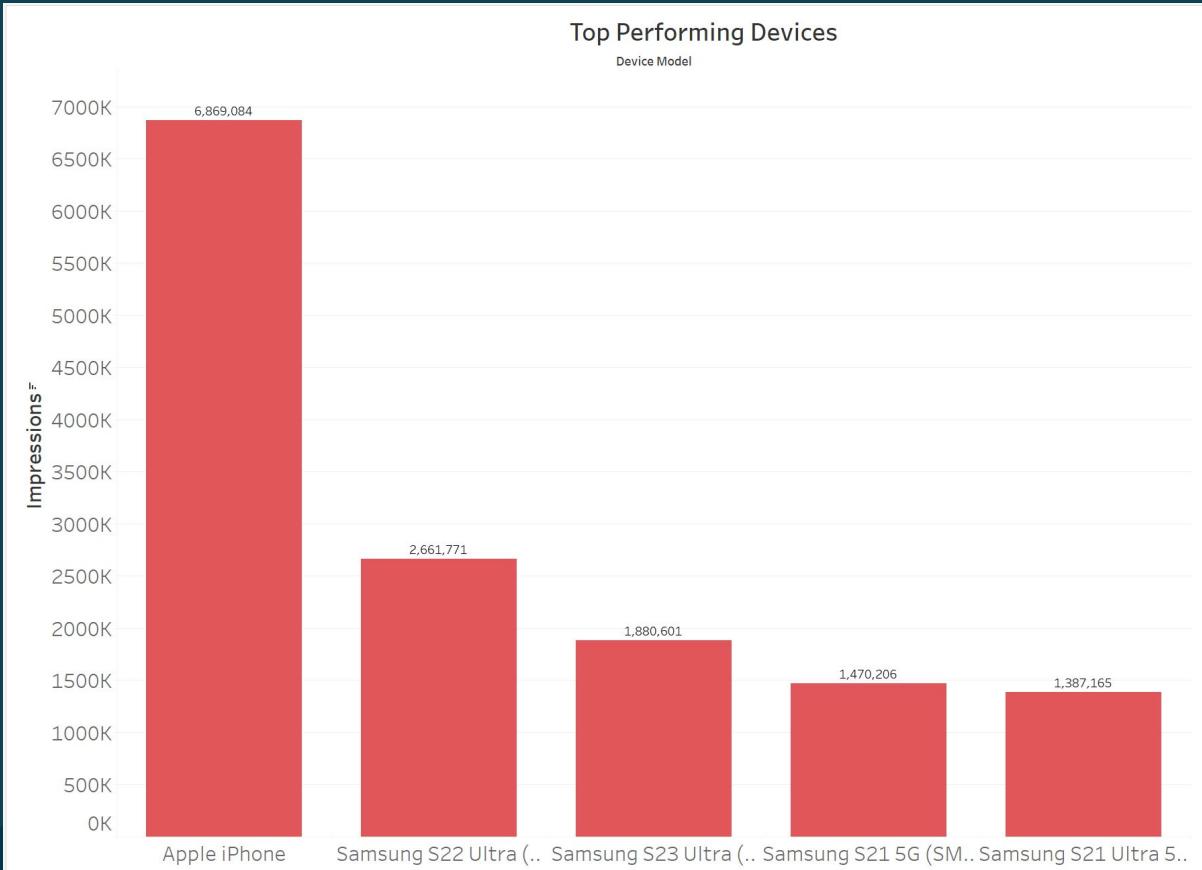
Many of these states only have below 5 DMA.

# Bottom 60 Performing States



Bottom DMAs  
only have a  
total of 1  
impression

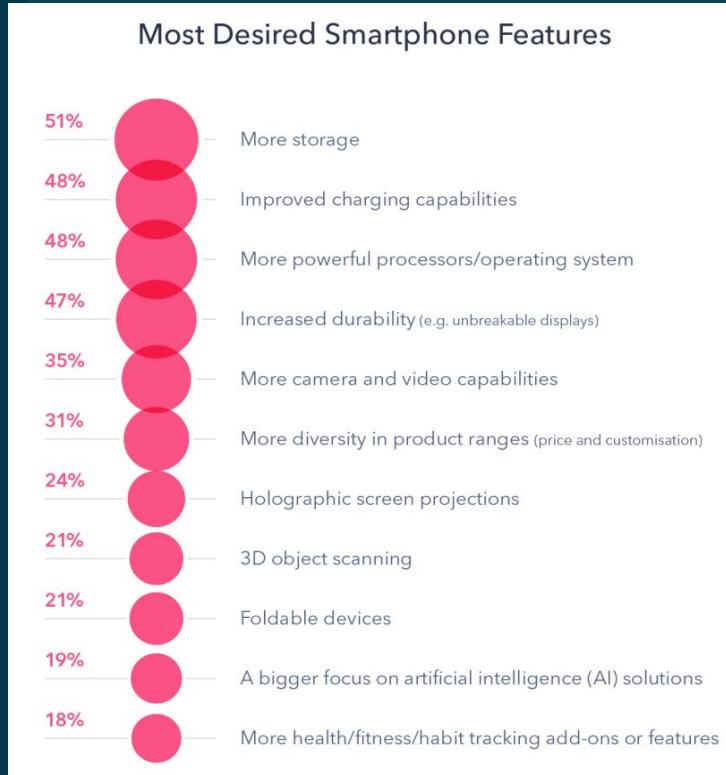
# Top 5 Performing Devices



## Callout (TOP)

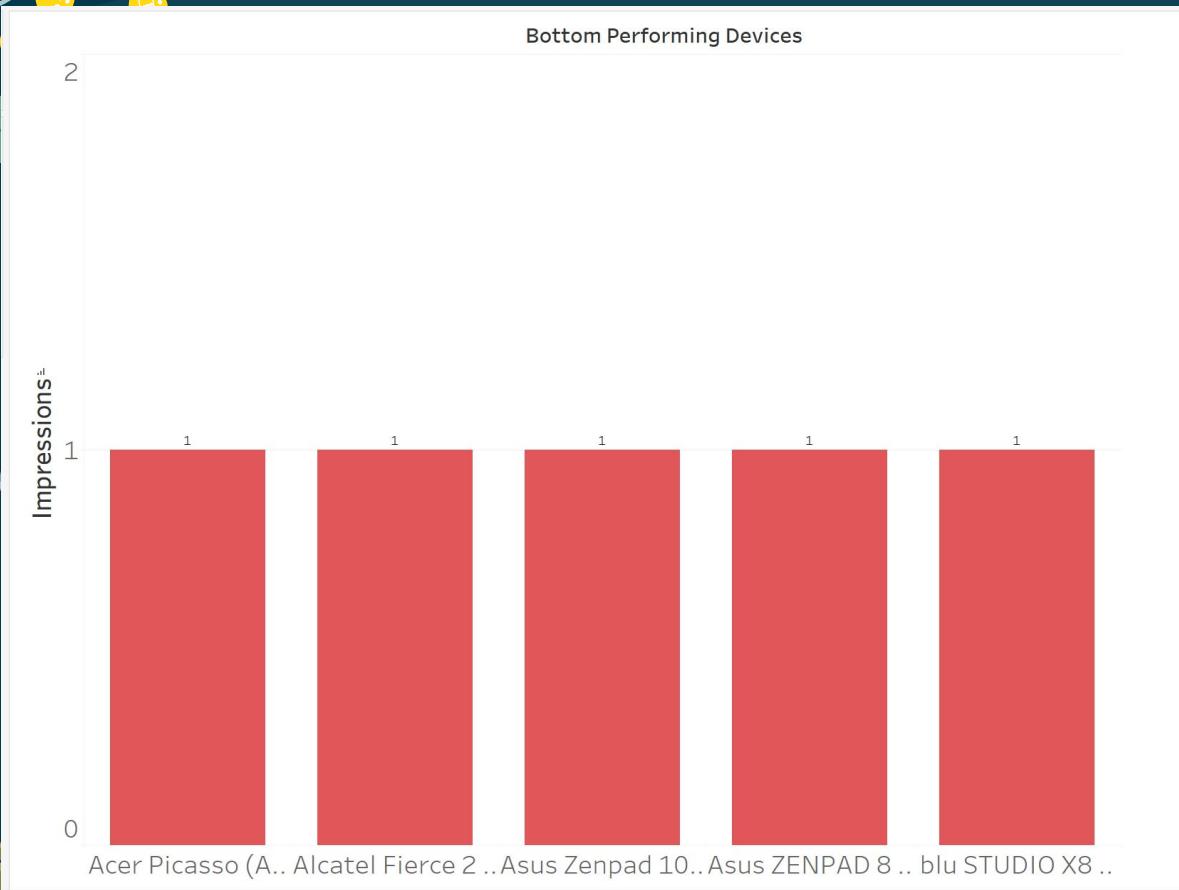
- CTR: 0.3%
- CPA: \$21.75

# Insights & Recommendations for 5 Top Devices



- **Highlight salient features** in marketing campaigns and leverage technical advancements to help customers make informed choices.
- **Focus on the competitiveness** to understand and highlight differentiators.
- **Engage with users** to gather feedback on existing models.

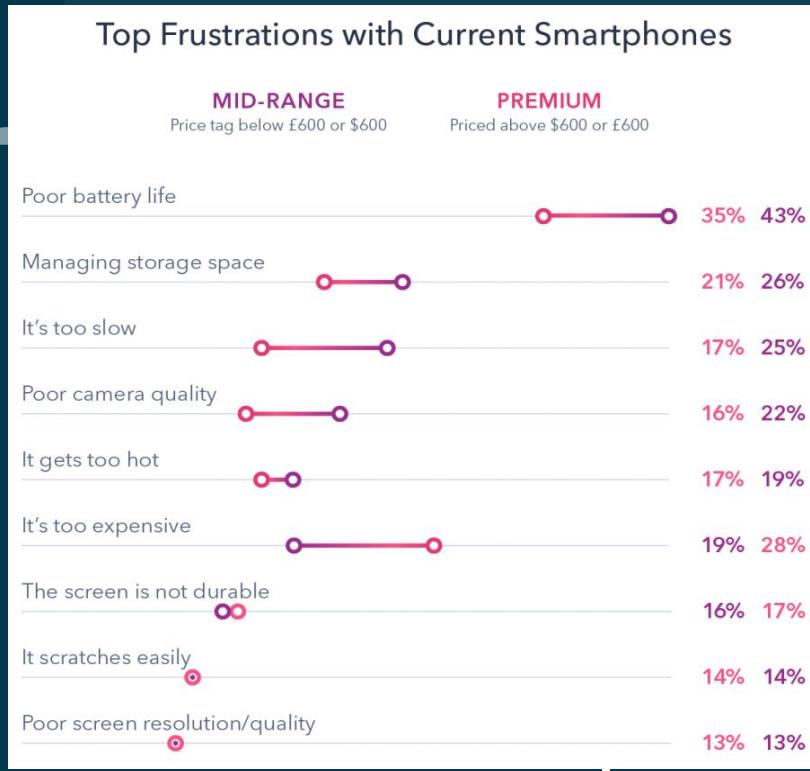
# Bottom 5 Performing Devices



## Callout (BOTTOM)

- CTR: 0.01%
- CPA: \$0.1

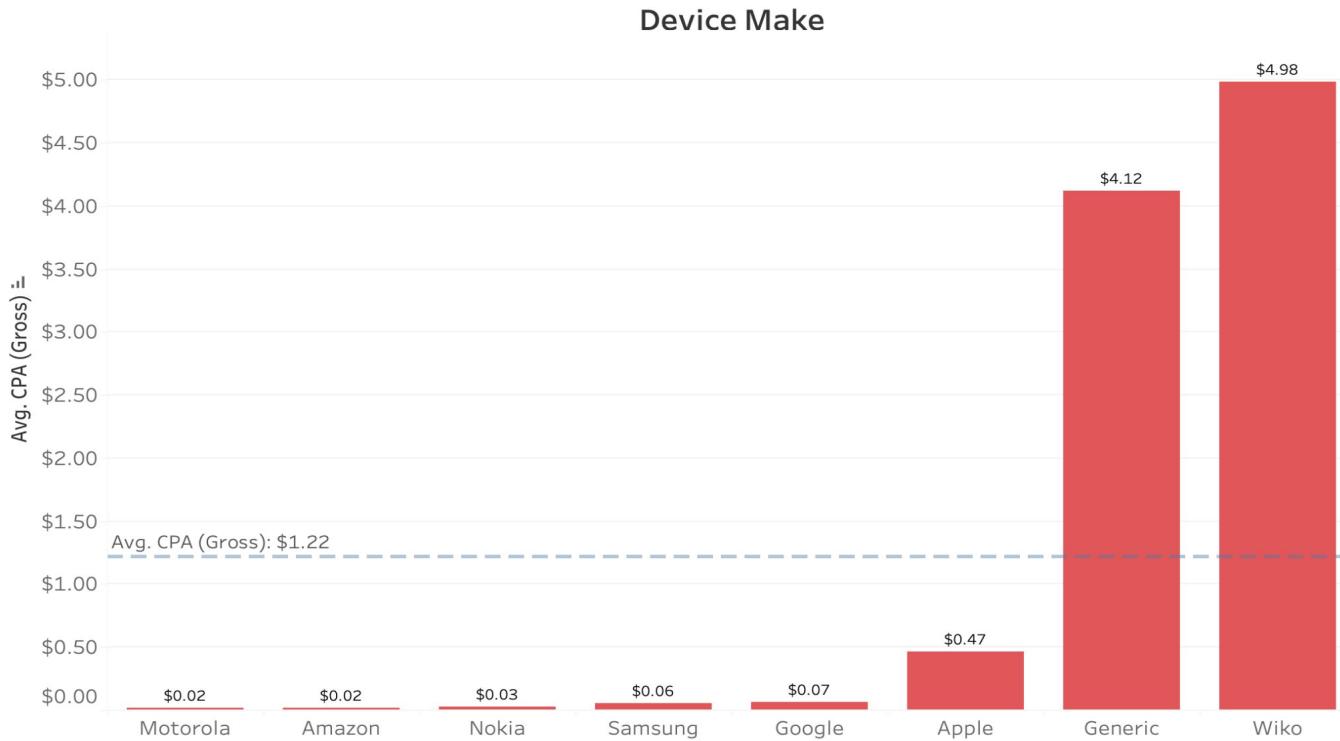
# Why these devices are performing or underperforming?



- Consider releasing an **updated version with improved hardware specifications** to meet current user demands.
- **Emphasize unique features and performance improvements** in marketing campaigns to attract consumers.
-

# Top DMA Device Performance

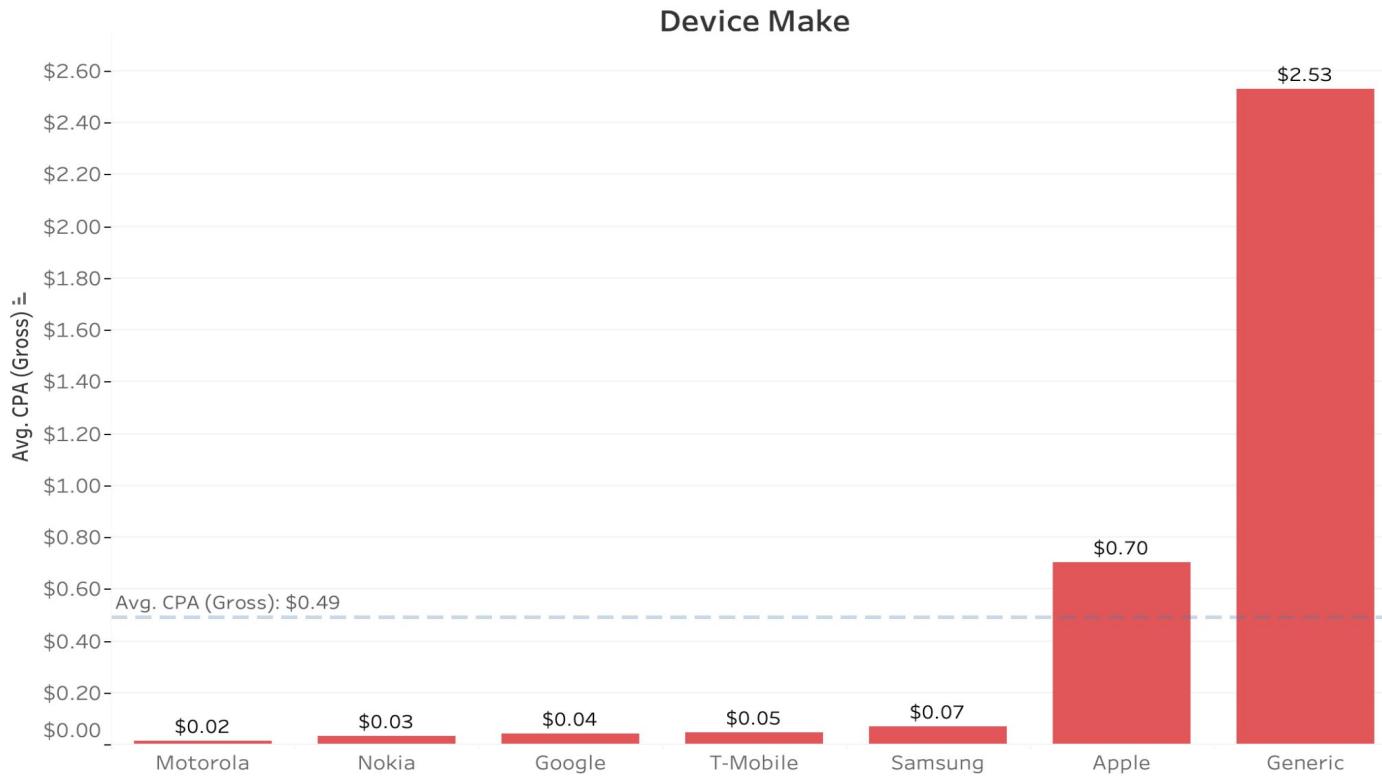
## CHICAGO, ILLINOIS



- Motorola, Amazon, Nokia, Samsung and Google are the most cost effective devices.
- Apple remains within reasonable range.
- There is opportunity for growth with Wiko and Generic.

# Top DMA Device Performance

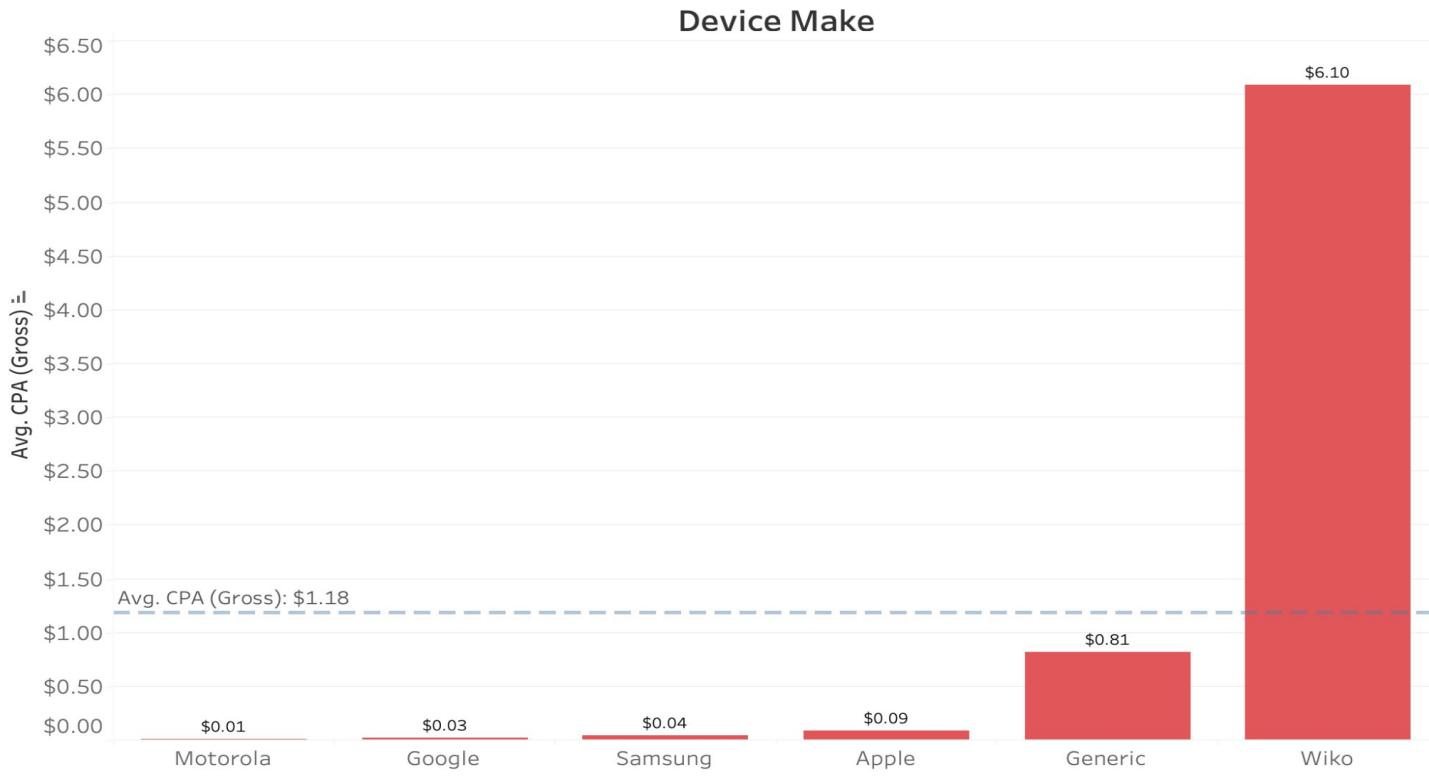
ATLANTA, GEORGIA



- Motorola, Nokia, Google, T-Mobile, and Samsung are most cost effective devices.
- Apple slightly above the average
- There is opportunity for growth with Generic.

# Top DMA Device Performance

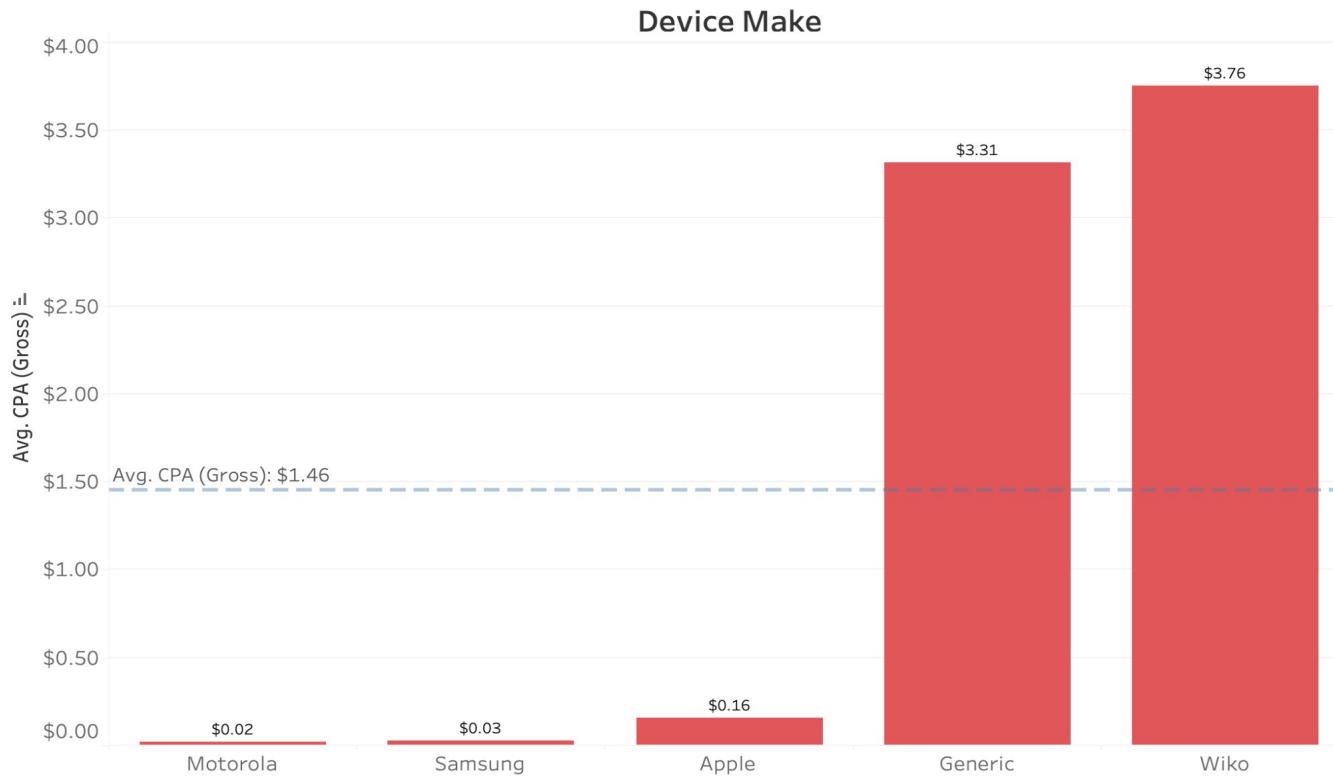
## DETROIT, MICHIGAN



- Motorola, Google, Samsung, and Apple are most cost effective devices.
- Generic devices are within reasonable range.
- Growth opportunity with Wiko.

# Top DMA Device Performance

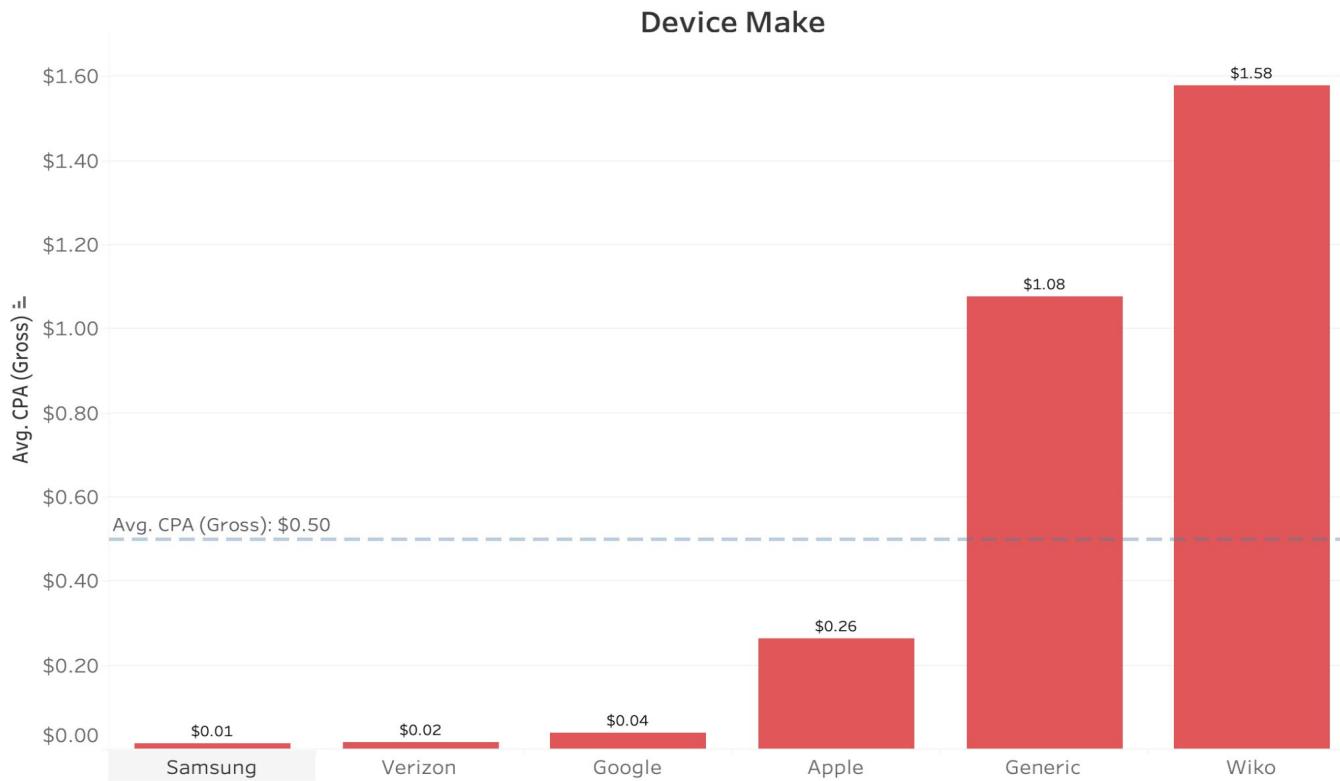
NASHVILLE, TENNESSEE



- Motorola, Samsung, and Apple are the most cost effective.
- Growth opportunity with Generic and Wiko.

# Top DMA Device Performance

INDIANAPOLIS, INDIANA



- Samsung, Verizon, and Google are the most cost effective devices.
- Apple within range below the overall average.
- Growth opportunity with Generic and Wiko.

# Device Performance Across Major DMAs

## **Consistent top performers across the top 5 DMAs:**

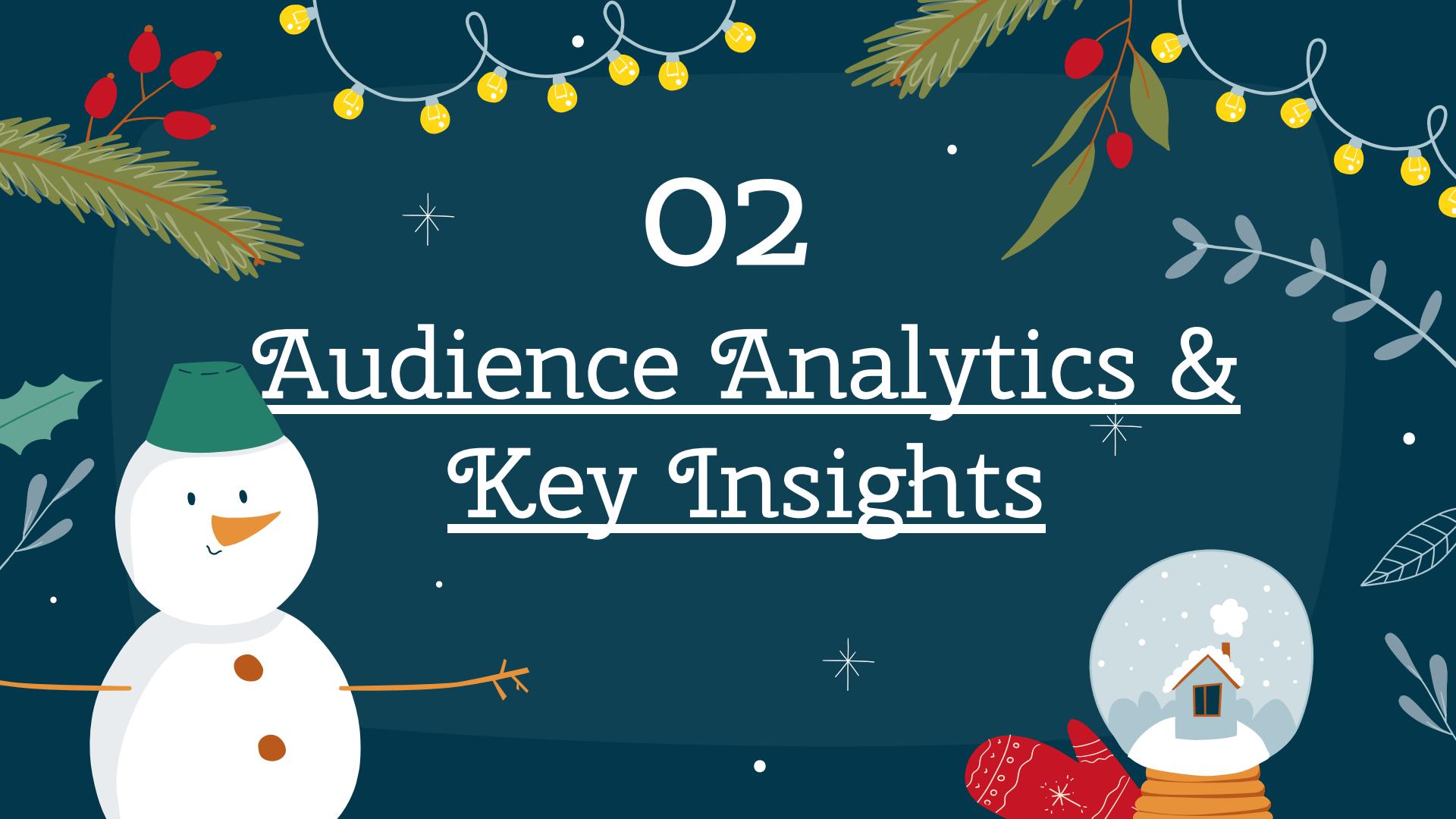
- Motorola and Samsung emerge as top performing devices in multiple DMAs (Chicago, Atlanta, Nashville, and Indianapolis).
- Google maintains a strong presence positioning as a top performer in Multiple DMAs (Chicago, Atlanta, Detroit, and Indianapolis).
- Apple consistently appears within the mid-range in multiple DMAs (Chicago, Atlanta, Detroit, and Indianapolis).

## **Consistent bottom performers across the top 5 DMAs:**

- Wiko appears as a bottom performer across multiple DMAs (Detroit, Nashville, and Indianapolis).
- Generic devices consistently appeared within the bottom performers across the DMAs (Chicago, Atlanta, Nashville, and Indianapolis).

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## Audience Analytics & Key Insights



# Top Audience Segments based on Key Performance Indicators

1. **Top Impressions & Clicks:** Demographics » Household Income (USD) » Unknown
2. **Top Conversion Rate:** In-Market Categories » Autos & Vehicles » Motor Vehicles » Motor Vehicles by Type » Hatchbacks
3. **Top CTR & CPC:** Sub&NonSub\_Business\_MobileVisitors
4. **Top CPA & Conversion Rate:** In-Market Categories » Business Services » Business Technology » Web Services » Domain Registration
5. **Top Cost Per Mille:** Affinity Categories » Sports & Fitness » Sports Fans » Fans of Australian Football

# Audience KPI's (Top Impressions & Clicks)

Demographics » Household Income (USD) » Unknown

**137,311,897**

Impressions

**27,202**

Clicks

**11.47%**

Conversion Rate

**.02%**

Click-Through Rate

**\$7.03**

Cost Per Click

**\$61.27**

Cost Per Acquisition

**\$1.39**

Cost Per Mille

- This audience segment ranked #1 based on impressions and clicks.
- Conversion rate performs below the average of 19.39%.
- CTR is low for industry standards but well-performing in terms of the audience segments in this dataset.
- The CPC and CPM are both cost-efficient and fall below the audience segment averages of \$7.24 and \$1.90.
- The CPA is not as efficient as other KPIs, since it is above the average audience segment CPA of \$31.54.

# Audience KPI's (Top CTR & CPC)

## Sub&NonSub\_Business\_MobileVisitors

17,479

Impressions

1211

Clicks

0%

Conversion  
Rate

6.93%

Click-Through-Rate

\$0.05

Cost Per  
Click

\$0

Cost Per  
Acquisition

\$3.51

Cost Per  
Mille

- CTR & CPC is highest because...
  - Impression is relatively low compared to the average impressions of 2,822,145.329
  - Clicks is relatively high compared to the average clicks of 734.088
- But Conversion Rate & Cost per Acquisition are really bad because
  - Total conversions is 0
- Therefore, good at attractions but bad at retention

# Audience KPI's (Top CVR)

In-Market Categories » Business Services » Business Technology » Web Services » Domain Registration

631,329

Impressions

117

Clicks

76.92%

Conversion Rate

0.019%

Click-Through Rate

\$10.15

Cost Per Click

\$13.20

Cost Per Acquisition

\$1.88

Cost Per Mille

- Segment had outstanding conversion rate but had trouble getting audience to click on the ad
- Improve CTR by:
  - Ensuring targeting is accurate
  - Improving ad creatives

# Audience KPI's (Top CPM).

Affinity Categories » Sports & Fitness » Sports Fans » Fans of Australian Football

1,022,345

Impressions

102

Clicks

29.41%

Conversion Rate

0.01%

Click-Through Rate

\$10.70

Cost Per Click

\$36.39

Cost Per Acquisition

\$1.07

Cost Per Mille

- Audience achieved the lowest (best) CPM of \$1.07, while carrying a respectable cost per click, but a high cost per acquisition
- Click through rate and cost per acquisition could be improved by improving targeting, ads, and landing page appeal

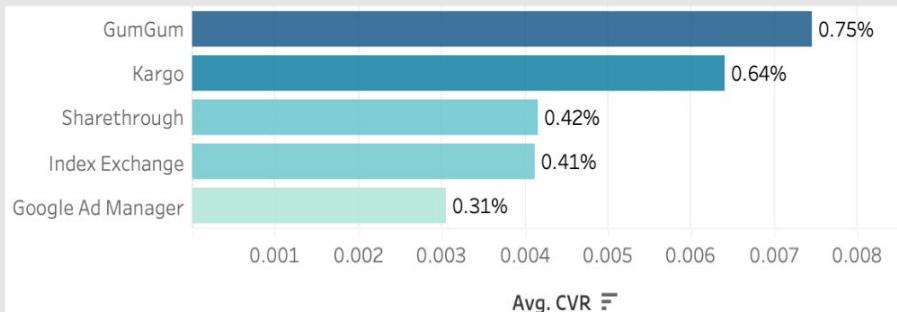
03

# Inventory Analytics & Key Insights

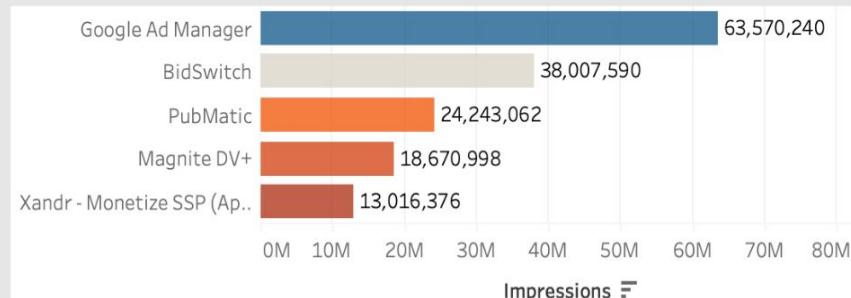


## Key Performance Indicator (KPI)

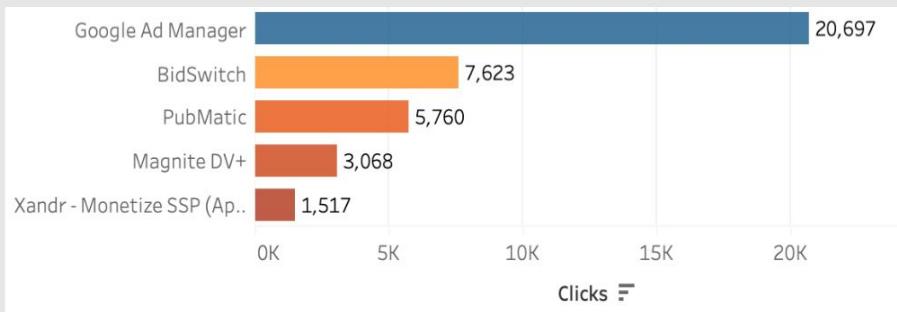
### Top 5 Highest Conversion Rates



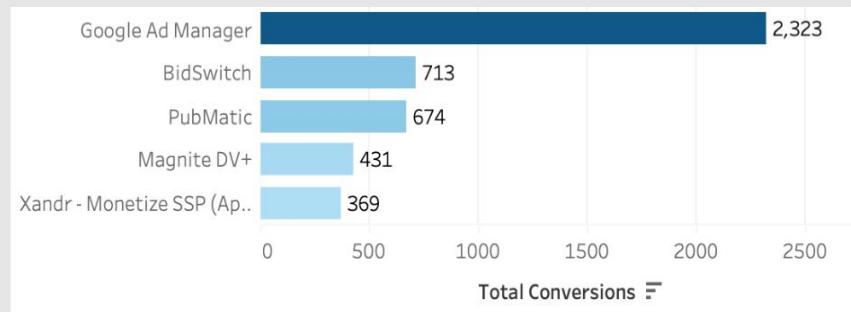
### Exchange Vs. Impressions



### Exchange vs. Total Clicks



### Exchange Vs. Conversions



# Key Performance Indicator (KPI)

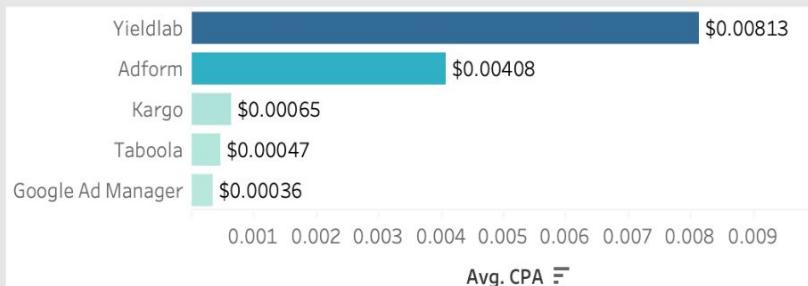
## Top 5 Highest Cost Per Click



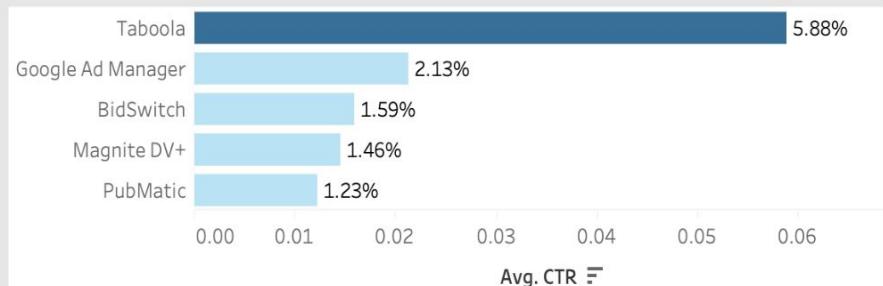
## Top 5 Highest Cost Per Mille



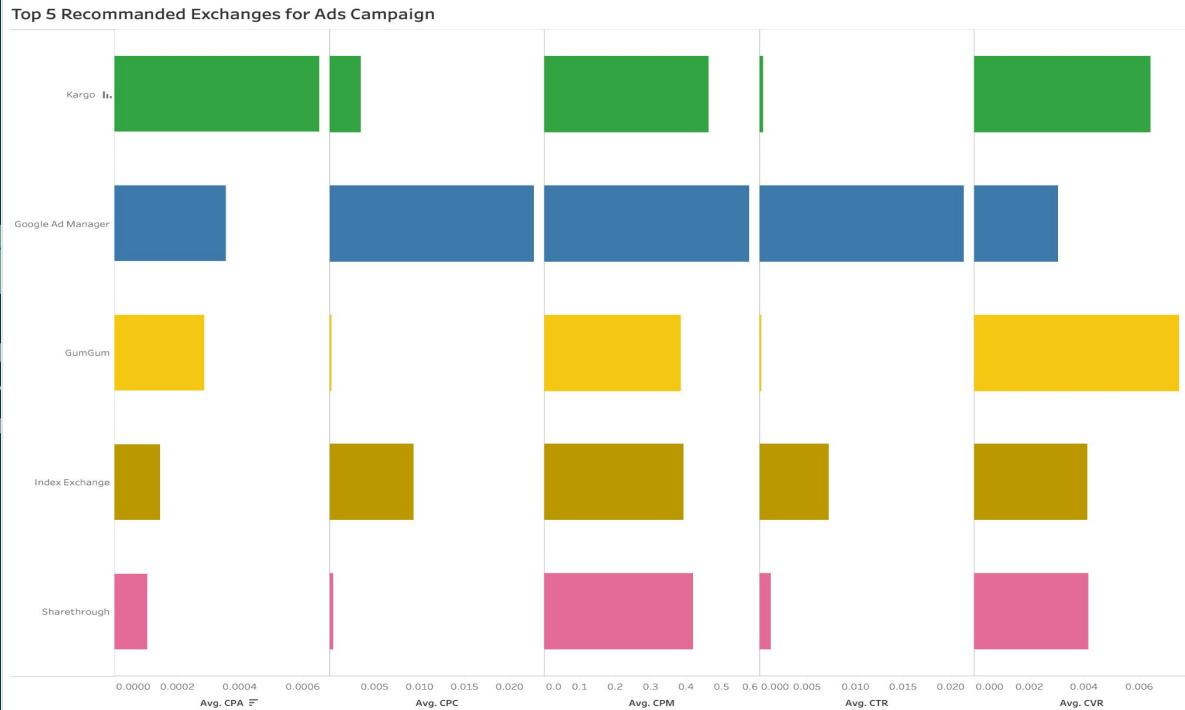
## Top 5 Highest Cost Per Acquisition



## Top 5 Highest Click Through Rates



# Top 5 Performing Inventory Sources



1. Kargo
2. Google Ad Manager
3. GumGum
4. Index Exchange
5. Sharethrough

## The Highest Cost Inventory

```
In [246]: 1 app_cpc = inventory_data.loc[:,["App/URL", "CPC"]].groupby("App/URL").mean()
2 app_cpc.sort_values("CPC",ascending=False).head()
```

Out[246]:

CPC

App/URL	CPC
bestbuy.com	6.452518
kbb.com	5.420606
autotrader.com	4.031650
realtor.com	3.283523
ebay.com	3.157806

```
In [245]: 1 app_cpa = inventory_data.loc[:,["App/URL", "CPA"]].groupby("App/URL").mean()
2 app_cpa.sort_values("CPA",ascending=False).head()
```

Out[245]:

CPA

App/URL	CPA
simuladododetran.net.br	1.000000
barcavoice.com	0.500000
genthirty.com	0.333333
thebulgarianetimes.com	0.333333
informebrasil.com.br	0.333333

```
In [247]: 1 app_cpm = inventory_data.loc[:,["App/URL", "CPM"]].groupby("App/URL").mean()
2 app_cpm.sort_values("CPM",ascending=False).head()
```

Out[247]:

CPM

App/URL	CPM
thenewzthing.com	8.780955
belaroundstheworld.com	8.407835
buzztribe.news	7.370213
saltsanity.com	7.364917
thesocialtalks.com	6.924872

## The Best Performance by CTR and CVR

```
In [248]: 1 app_ctr = inventory_data.loc[:,["App/URL", "CTR"]].groupby("App/URL").mean()
2 app_ctr.sort_values("CTR",ascending=False).head()
```

Out[248]:

CTR

App/URL	CTR
mail.yahoo.com	7.616813
kbb.com	6.782904
weather.com	6.670643
ebay.com	4.810962
phys.org	4.198557

```
In [249]: 1 app_cvr = inventory_data.loc[:,["App/URL", "CVR"]].groupby("App/URL").mean()
2 app_cvr.sort_values("CVR",ascending=False).head()
```

Out[249]:

CVR

App/URL	CVR
fruitpickingfarms.com	12.500000
canadacompanyregistry.com	10.000000
newyorkled.com	7.142857
yourgv.com	3.401361
fitnessdrum.com	3.125000

## The Best App/URL Displays for Ads Campaign

App/URL	Impressions	Clicks
<b>msn.com</b>	19284896.0	1254.0
<b>mail.yahoo.com</b>	14242604.0	1736.0
<b>yahoo.com</b>	14017438.0	1359.0
<b>weather.com</b>	8378986.0	1027.0
<b>ebay.com</b>	6515783.0	735.0
<b>outlook.live.com</b>	2014172.0	907.0

# Avg. CPA per Creative Size



The three creative sizes(pixels) reported are:

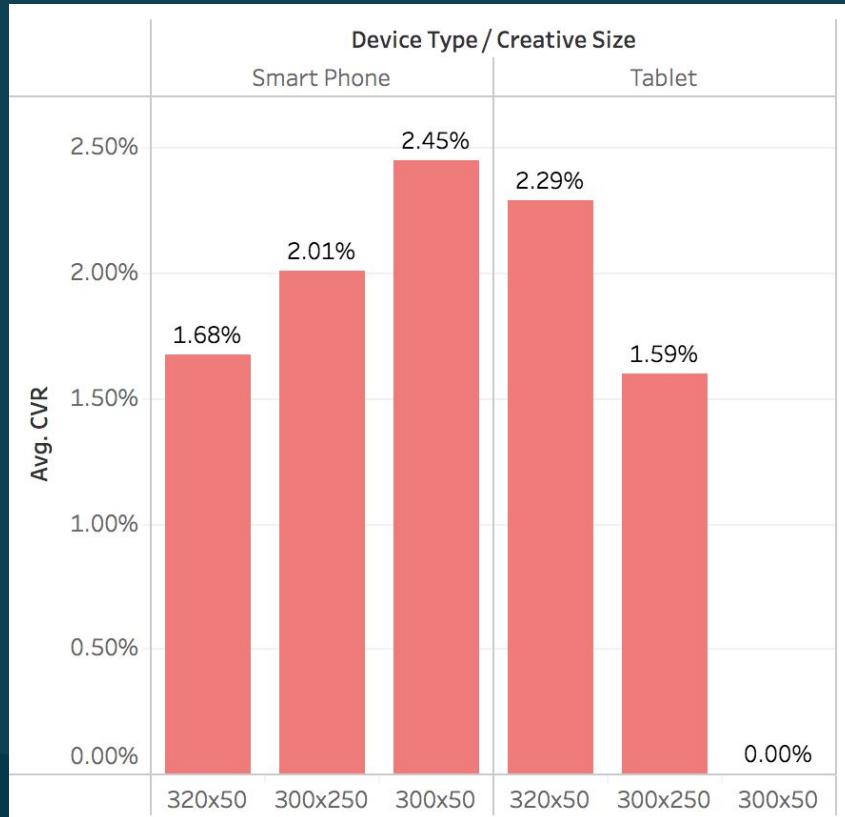
- 320x50
- 300x50
- 300x250

The sizes underlined are known as “mobile leaderboard” sizes.

The most cost-effective creative size is 300x250 because it has the lowest average CPA.

The least cost-effective creative size is 320x50 because it has the highest average CPA.

# Avg. CVR for Device Type/Creative Size



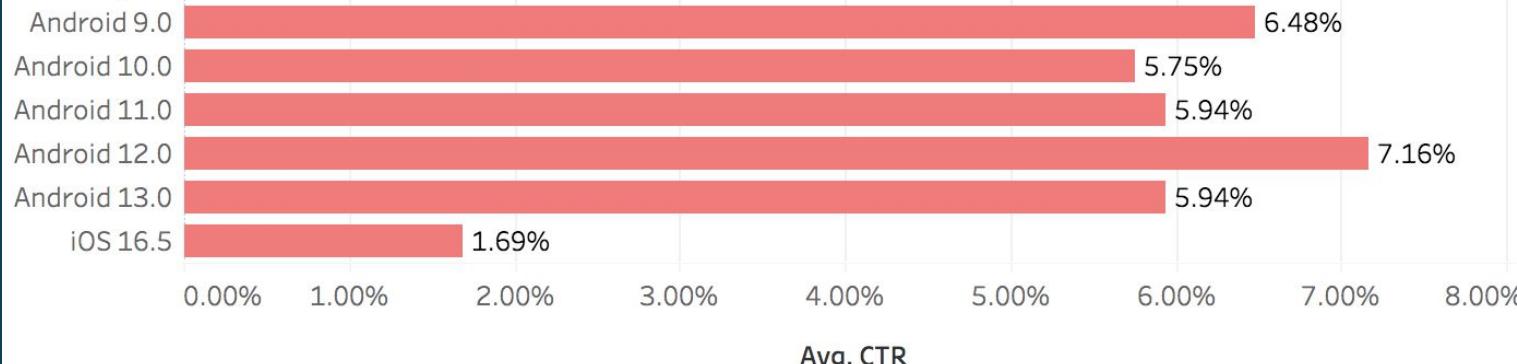
In terms of conversion rate:

- The best creative size for smartphones is size 300x50 as it has the highest average CVR.
- The best creative size for a tablet is size 320x50 as it has the highest average CVR.

# Top 5 Operating System by CTR

Avg. CTR by Operating System

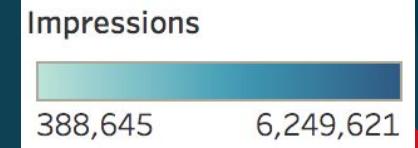
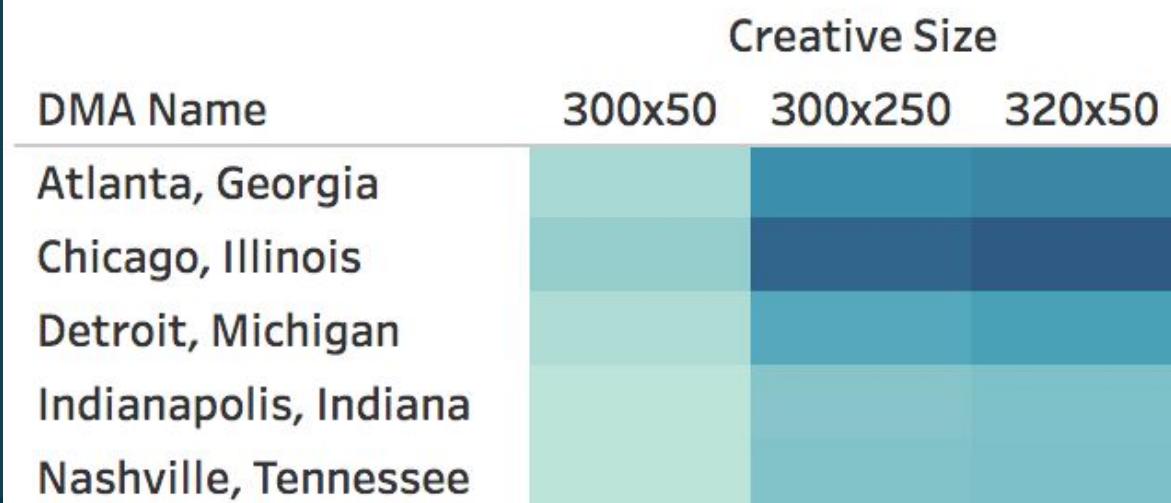
Operating S..



Android 12.0 has the largest avg. click-through-rate  
and their top creative size is 320x50 pixels.

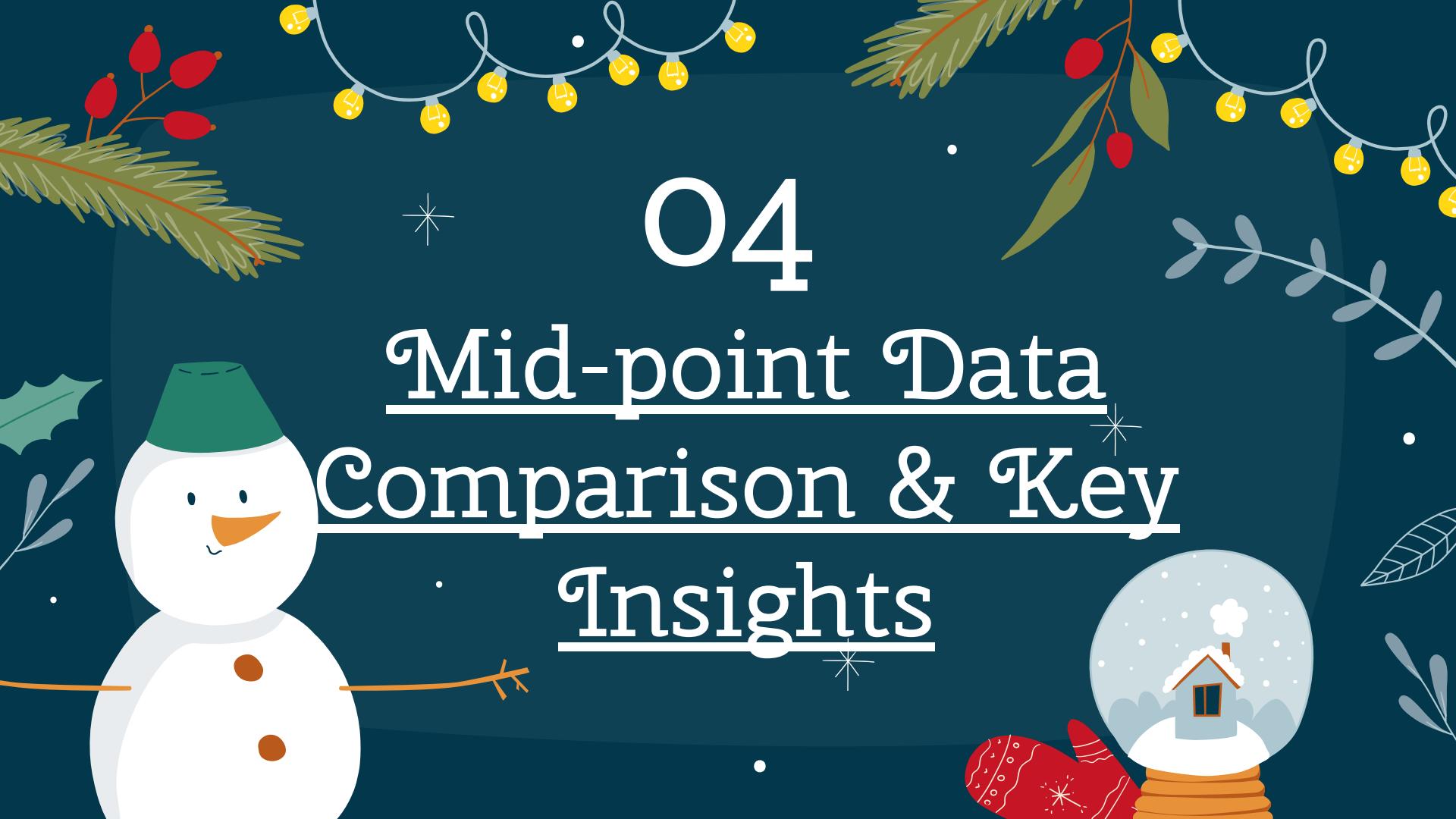
# Top Creative Size by Location

Impressions(SUM) by Creative size for Top DMA's



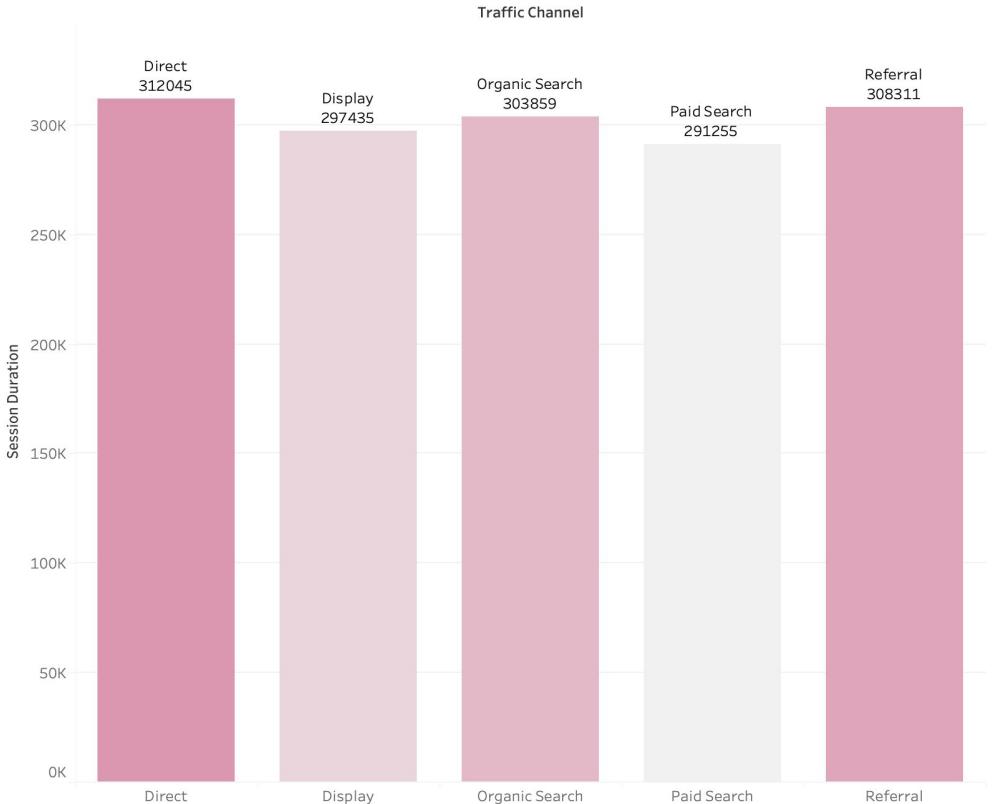
04

# Mid-point Data Comparison & Key Insights



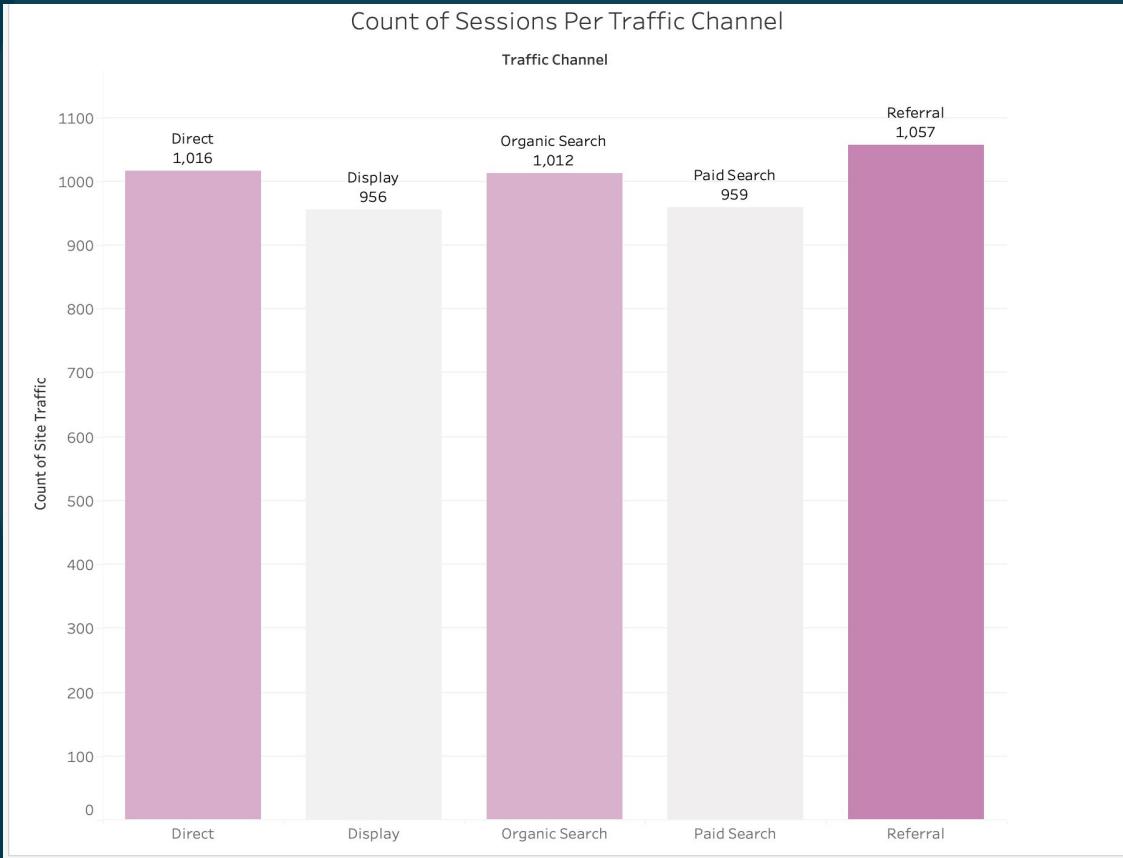
# Site Traffic

Total Session Duration for Each Traffic Channel



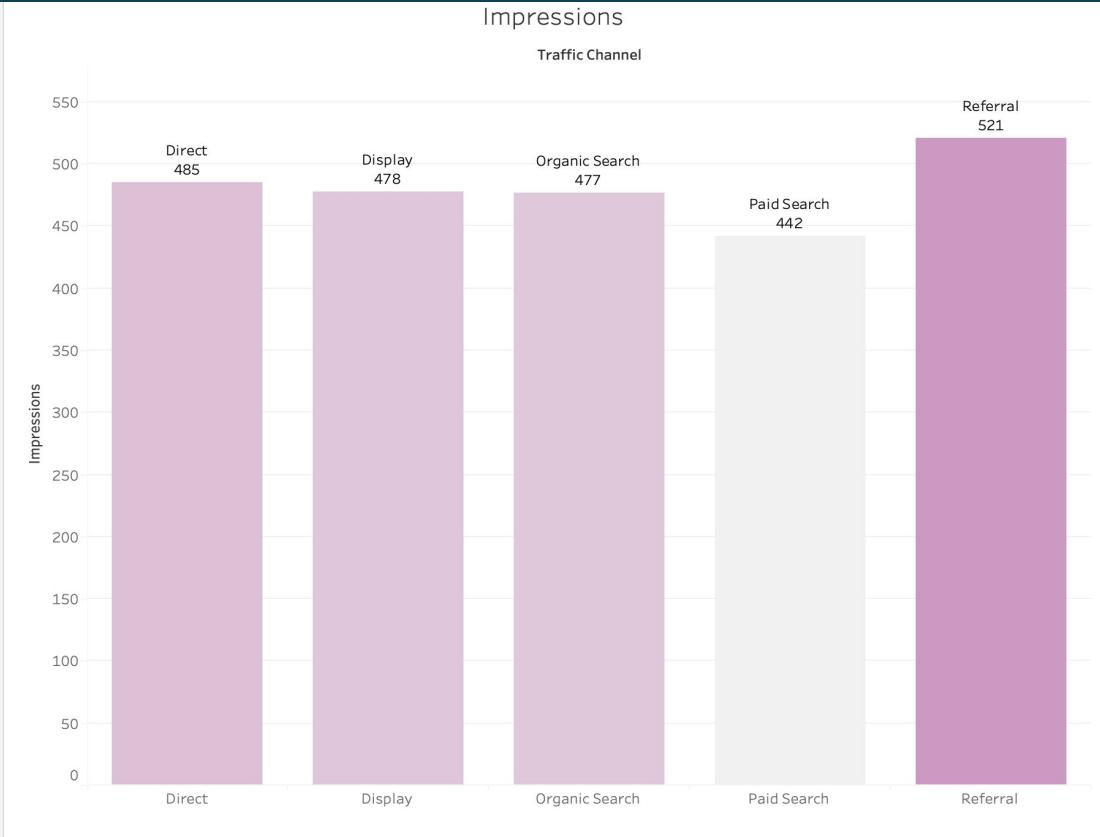
- Direct traffic channel had the longest session duration, at 86.6 hours.
- Organic search had a total duration of 84.4 hours.

# Site Traffic



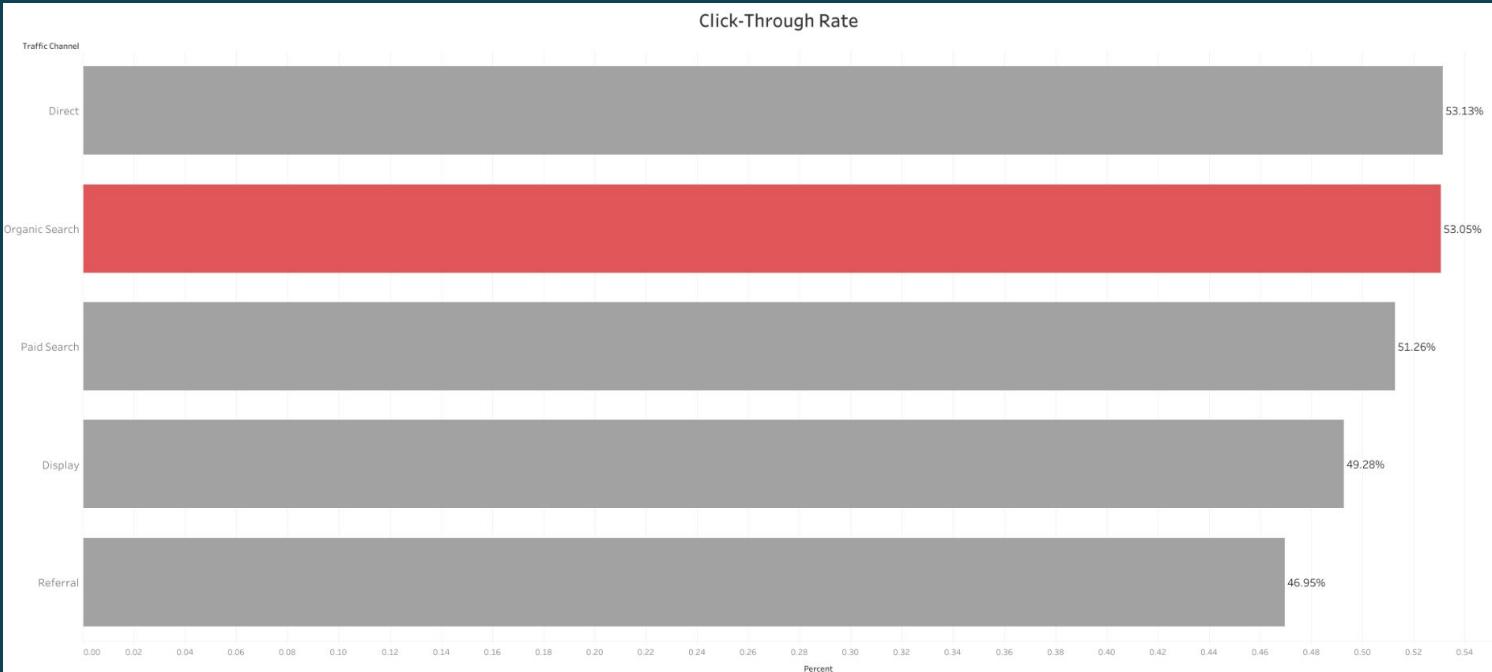
- Referral traffic channel had the most sessions.
- People visited referral traffic channels more often, by visiting through a link from another site.

# Site Traffic Impressions



- Total amount of impressions were 2,403
- Referral traffic had the most impressions
- Organic search had 477 impressions

# Traffic Key Performance Indicators



Organic Search has the 2nd best performing CTR, higher than the industry average CTR.

# Traffic Key Performance Indicators

Traffic Channel	Visitors	Converted	Conversion Rate
Direct	480	126	26.25%
Display	483	115	23.81%
<b>Organic Search</b>	<b>475</b>	<b>127</b>	<b>26.74%</b>
Paid Search	437	108	24.71%
Referral	509	115	22.59%
<b>Grand Total</b>	<b>2384</b>	<b>591</b>	<b>24.79%</b>

Organic Search is the best performing traffic channel because it has the highest CVR.

# Ad Exposure

Total Visitors	Impression	Clicks
5,000	2,385	1,208

- Banners are performing **below average** in terms of conversion rate, CPA, and CPC.
- There should be a focus on **Carousel** and **Video** to increase clicks and conversions.



# Location Insights

The five most frequently recorded locations were:

- Gulfport, MS (80)
- Hilo, HI (80)
- Evansville, IN (74)
- Knoxville, TN (74)
- Fairbanks, AL (71)

## Notable Statistics:

- Fairbanks and Evansville have high CPAs and high conversion rates
- Hilo was the most reported, the median CVR is 20.83%

Location (DMA)	Ad Frequency	SUM of CPA	Average CVR
Evansville, Indiana	74	\$141.73	13.16%
Fairbanks, Alaska	71	\$830.50	30.77%
Gulfport, Mississippi	80	\$1,191.30	38.10%
Hilo, Hawaii	80	\$256.33	20.83%
Knoxville, Tennessee	74	\$186.75	10.34%

Banner ads have the highest conversion rate in:

- Evansville
- Hilo
- Gulfport

• Video ads are the most expensive creative format.

CARD Advertising should refine and focus on their banner ads.

Hilo, Evansville, and Fairbanks should be sites of interest for CARD.

Location (DMA)	Ad_Format	Ad Frequency	SUM of CPA	Average CVR
Evansville, IN	Banner	25	\$104.95	57.14%
	Carousel	32	\$36.78	4.35%
	Video	17	\$0.00	0.00%
Evansville, IN Total		74	\$141.73	13.16%
Fairbanks, AL	Banner	25	\$309.26	26.67%
	Carousel	9	\$38.32	25.00%
	Video	37	\$482.91	35.00%
Fairbanks, AL Total		71	\$830.50	30.77%
Gulfport, MS	Banner	28	\$112.32	27.27%
	Carousel	20	\$248.51	33.33%
	Video	32	\$830.47	45.45%
Gulfport, MS Total		80	\$1,191.30	38.10%
Hilo, HI	Banner	22	\$25.33	50.00%
	Carousel	24	\$0.00	0.00%
	Video	34	\$231.00	27.27%
Hilo, HI Total		80	\$256.33	20.83%
Knoxville, TN	Banner	26	\$0.00	0.00%
	Carousel	24	\$86.72	6.67%
	Video	24	\$100.04	28.57%
Knoxville, TN Total		74	\$186.75	10.34%

# Location Insights

The five least recorded locations were:

- Columbus, OH (34)
- Concord, NH (35)
- Dallas, TX (36)
- Wichita, KS (39)
- Casper, WY (39)

Location (DMA)	Ad Frequency	SUM of CPA	Average CVR
Casper, Wyoming	39	\$89.22	4.76%
Columbus, Ohio	34	\$20.16	6.67%
Concord, New Hampshire	35	\$153.20	23.08%
Dallas, Texas	36	\$314.77	21.74%
Wichita, Kansas	39	\$128.26	18.75%

CARD should re-evaluate their campaign strategy. Customers in this area may not be CARD's target demographic.

# 05

## Conclusion



# Takeaways

- **Organic Search** is the **top** performing traffic channel and should be highlighted as a focus when considering how to **increase** visitors.
- Chicago, Illinois has the **highest number of impressions** within all of the locations in the United States.
- Audience Analytics & Key Insights: Top performing Audience: Demographics » Household Income (USD) » Unknown
- Most efficient creative sizes are the “mobile leaderboard” sizes: **320x50** and **300x50**. Even though it's the least cost-effective, it performed well in terms of CVR, CTR and had the highest impressions for the top DMA.
- Although **video** is the most **expensive** ad format , both **video** and **carousel** are the most **efficient** ways of advertising to consumers.

# Thanks!

Do you have any questions?

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