

## **MVP: What patterns in user sessions can we find?**

### **Impact Hypothesis:**

By better understanding (1) who their users are and (2) how different types of users convert on the website, Google Merchandise Store can create more intentional targeting and growth strategies to increase conversions.

### **Data Gathering, Cleaning and Exploration:**

The data gathered consists of 1710 rows and 30+ columns that describe a unique user's behavior on a given session. Cleaning consisted of: replacing null values with logical replacements, deleted columns that have a majority of null values, exploding nested dictionaries within specific columns into interpretable columns and dropping nonsensical rows.

- **Assumptions and Simplifications:**

Given 95% of the data consists of “non repeated” customers, I only keep a sample corresponding to the last occurrence of a customer in order to treat the data uniformly across users.

- **Towards the Solution Path:**

Thinking about how to treat this simplification for the proposed solution path, I experimented with grouping by visitorId and :

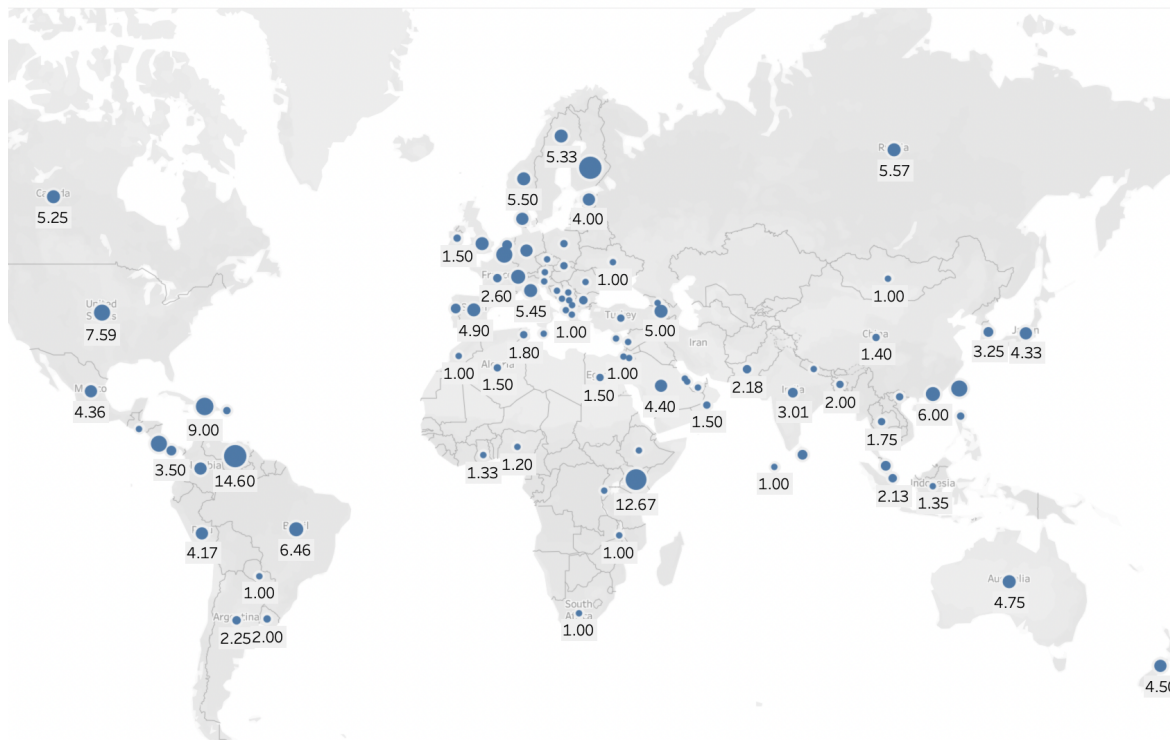
- Creating dummy variables for categorical data
- Concatenating fields that reflect the consumer journey (example: the channels that the user converted from.

## Preliminary visualizations and observations:

Note that these preliminary visualizations are top line metrics that give an overview of behavior and demographics. Filtering with tableau will allow us to look more in depth into specific areas/ channel grouping and how they affect other data points and potentially form unique clusters. This is not representative of all the data points analyzed.

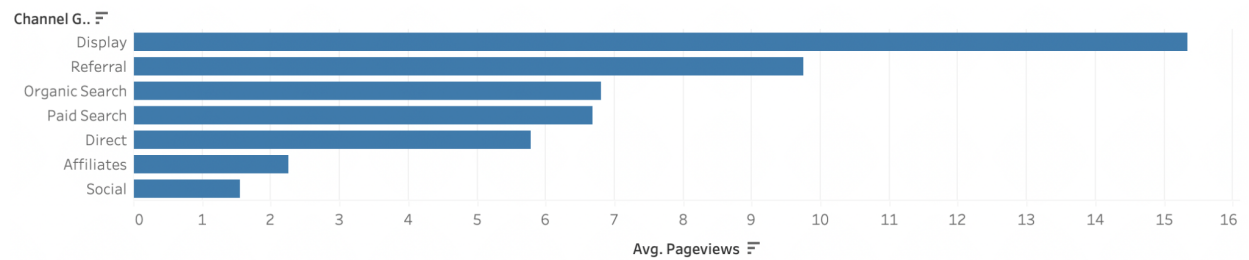
At a glance we see that most upper funnel traffic comes from the US, Venezuela, Kenya, Haiti amongst others.

**How many pages do users visit on average?**



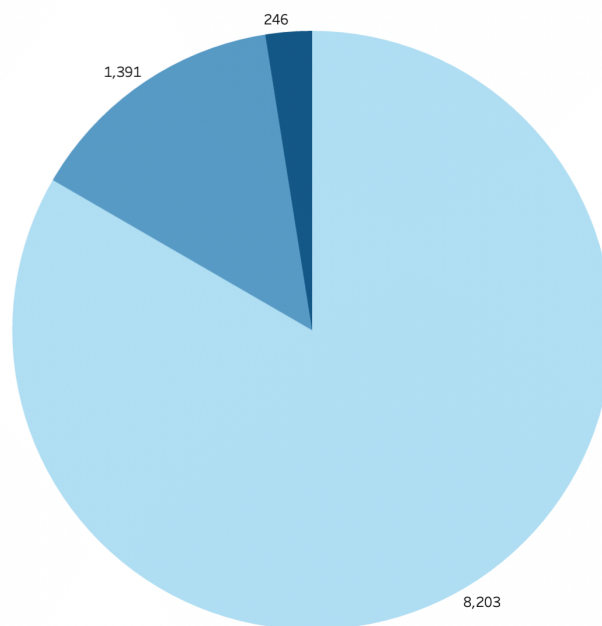
Users are mostly converting to the website from Display, this can be considered a mid funnel channel. Which channel drives the highest quality users?

### Which channel drives the most pageviews?



While most users are coming from Desktop, a large amount is coming from mobile, what strategies would drive them to more easily convert?

### What devices are users using?



#### Device Category

desktop

mobile

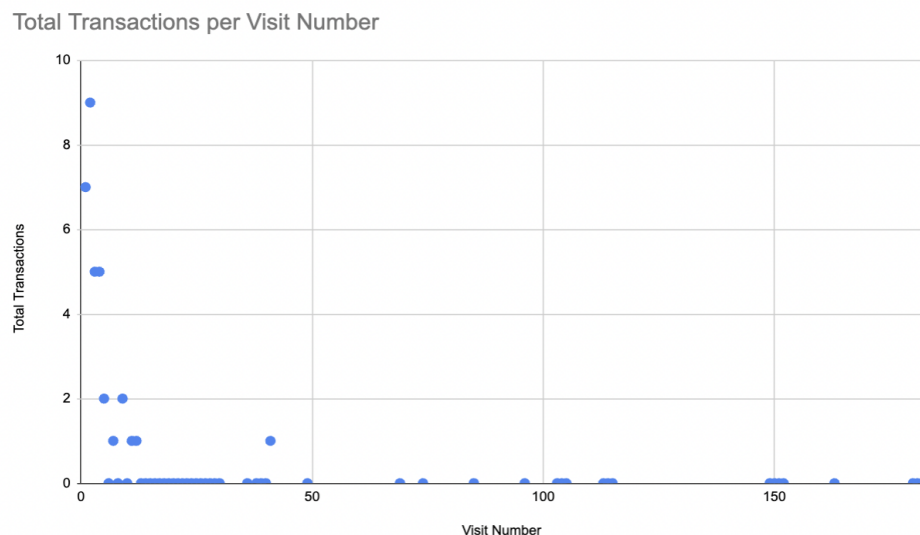
tablet

## **EDA in excel and tableau that informs next steps:**

Here, I walk you through a few questions I tried to answer through EDA to think about which variables to consider when thinking about profiling users that complete a purchase:

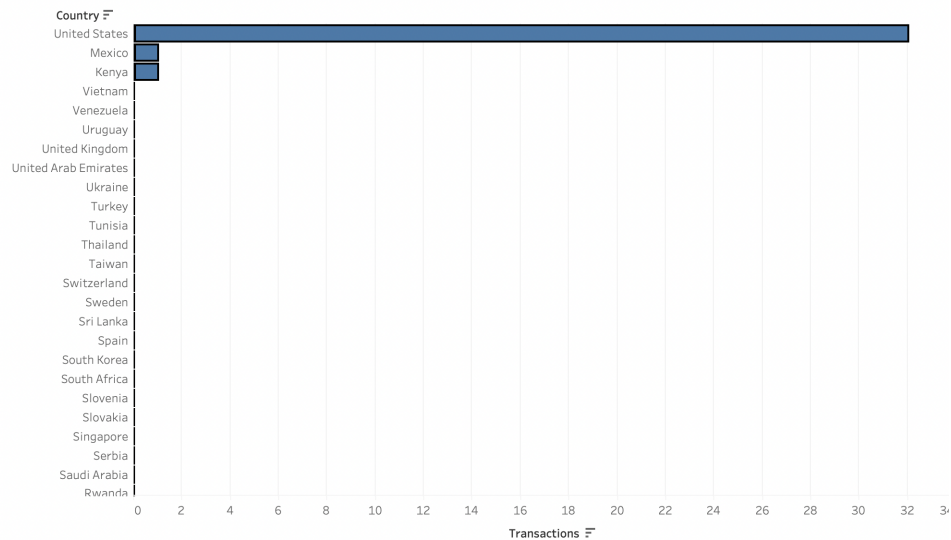
- Does the visit number play a direct role in the likeliness of a user to convert?

Interestingly enough, it looks like most transactions come from early visits:



- Where does most of the revenue originate from? Does this mean that ad content or website content better resonates per geographic area?

Where do most transactions come from?



## Next Steps:

- Layering in e\_commerce actions: are there patterns in users that perform a specific type of action or pairing of actions?
- Layering in product category: are there patterns in behaviors based on a specific category?
- An interesting additional data point to look at is ad content, unfortunately a lot of this data is missing.