

Web Analytics

Google Merchandise Store

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Introduction

Opportunity

The **Google Merchandise Store** collects a large amount of data regarding its website visitors across the world.

Social ads platforms allow to broadly retarget website visitors or even specific lists of customers. The data collected presents opportunities for even more **granular targeting** of users across categories through **consumer profiling** defined by historical **demographics** and **behavioral data**.

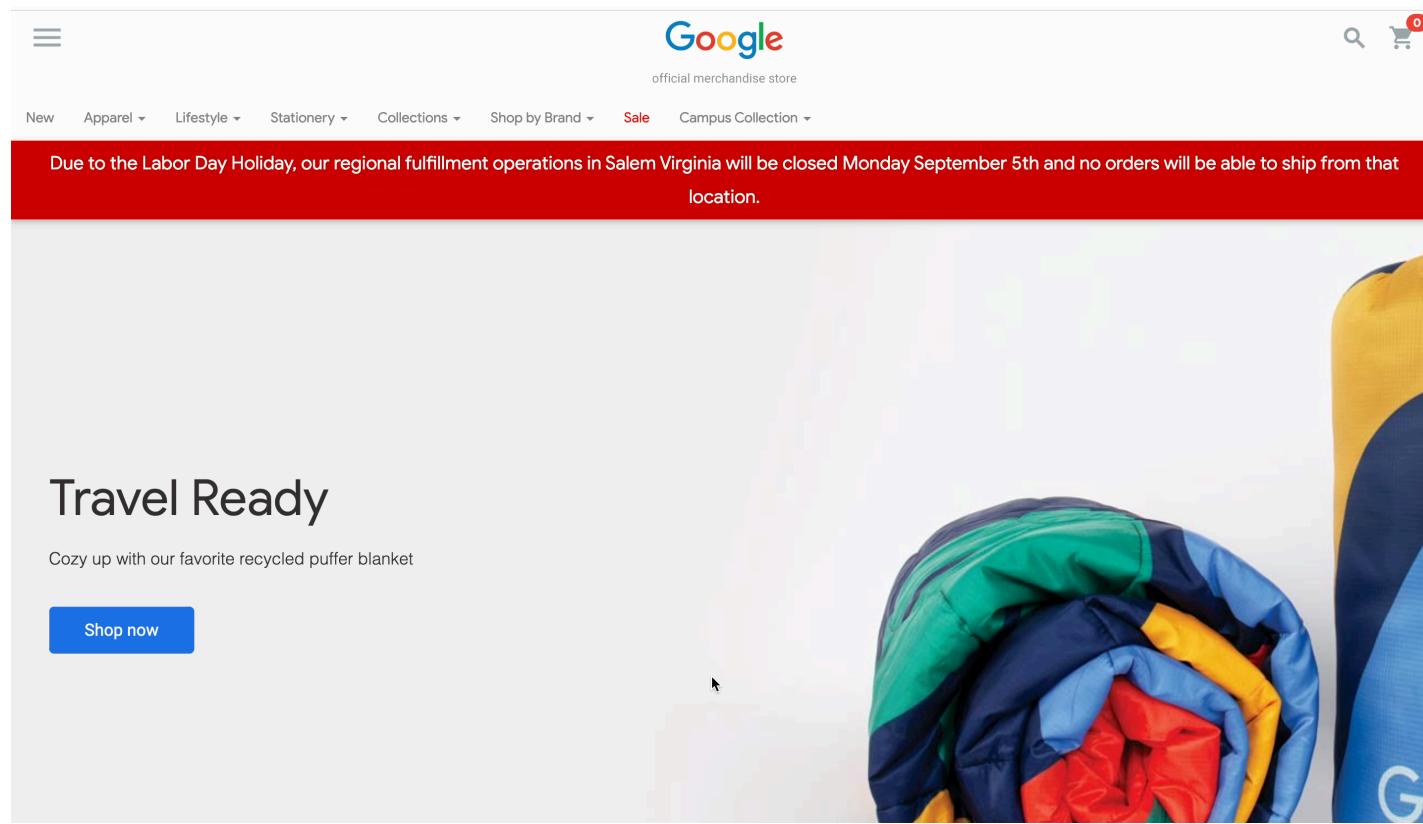
The screenshot shows the Google Merchandise Store homepage with a navigation bar at the top featuring links for Phones, Earbuds, Watches, Smart Home, Laptops, Subscriptions, and Offers. Below the navigation is a main heading: "Change your region and language". A sub-instruction reads: "Be sure to pick the location that matches your shipping address." To the right of the text is a graphic of three stylized human figures interacting with a large globe, one figure is on a ladder pointing to a location on the globe. Below the heading are three sections: Americas, Asia Pacific, and Europe, each listing countries and their languages.

Region	Countries	Languages
Americas	United States, Brasil, Canada, Canada, México	English, português, English, français, español
Asia Pacific	Australia, India, Japan, 대한민국, New Zealand	English, English, 日本語, 한국어, English
Europe	Österreich, Belgïe, Japan, 대한민국, Danmark, Suomi, Norge, Portugal, Belgique, España, Sverige, Schweiz	Deutsch, Nederlands, français, español, Dansk, suomi, norsk, português, français, Svenska, Deutsch

Google Merchandise Store Homepage

Funnel: User Journey

AQUISITION



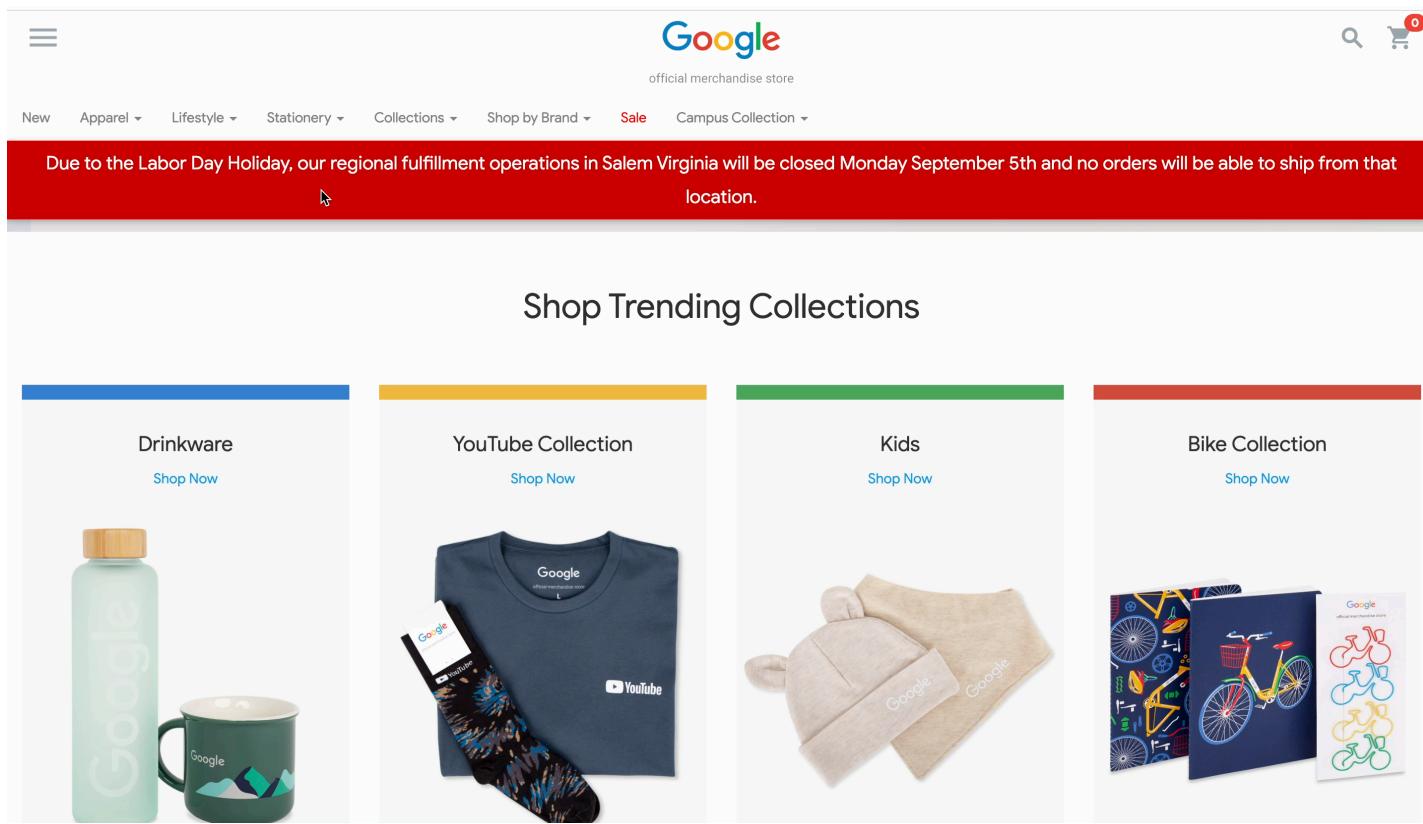
ACTIONS

Pageview

CHANNELS

High Funnel Social

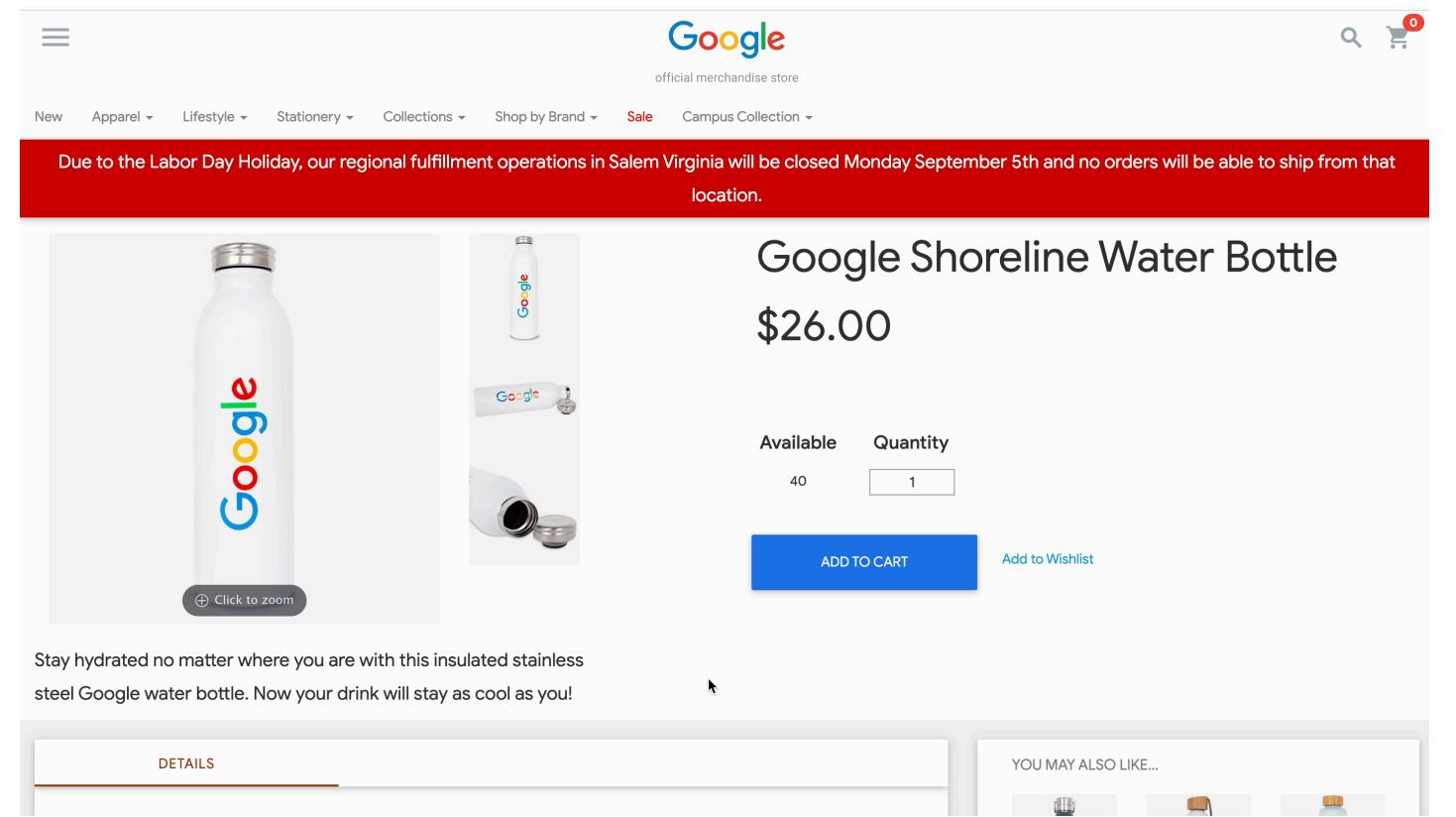
BEHAVIOR



Product Pageview, Product Detail

Display, Low Funnel Social

CONVERSION



Add to Cart, Checkout

Paid Search

Impact Hypothesis

By better understanding (1) how to group users by **demographics** and **behavioral data** points (2) how different types of users convert on the website, Google Merchandise Store can create more **intentional targeting** and growth strategies to increase sales.

Methodology

Scope

Preliminary EDA



Data Science Solution Proposed

Description: Exploration of groups of users and transactors.

Description: Use unsupervised learning for clustering visitors based on behavior and demographics to devise appropriate growth strategies.

Assumptions & Risks:

Simplification: The analysis is completed on one day of data, on latest visit by user. Sampling techniques, and more data would be used in the latter case.

Measure of success:

Upper funnel: Increase in visit times by new users, meaning appropriate users are being targeted

Lower funnel: Increase in conversions

Methodology

Process

Current Work

Future Work

Pre-Processing with Python

Python was used to narrow down and format the data to be readable in excel.



01

02



03

04



Cleaning & EDA with Excel

Cleaning consisting of replacing null values, removing duplicates, deleting columns with a majority of missing data points.

EDA & Visualization with Tableau

Leveraging insights from the preliminary EDA done in excel, three dashboards were created.

Data Science Solution Path

The preliminary eda serves as a naive approach to getting to know the data and paves the way to potentially using unsupervised learning for customer profiling. Clustering “types of purchasers” can allow Google to better target consumers at different stages of the purchasing funnel.

Findings

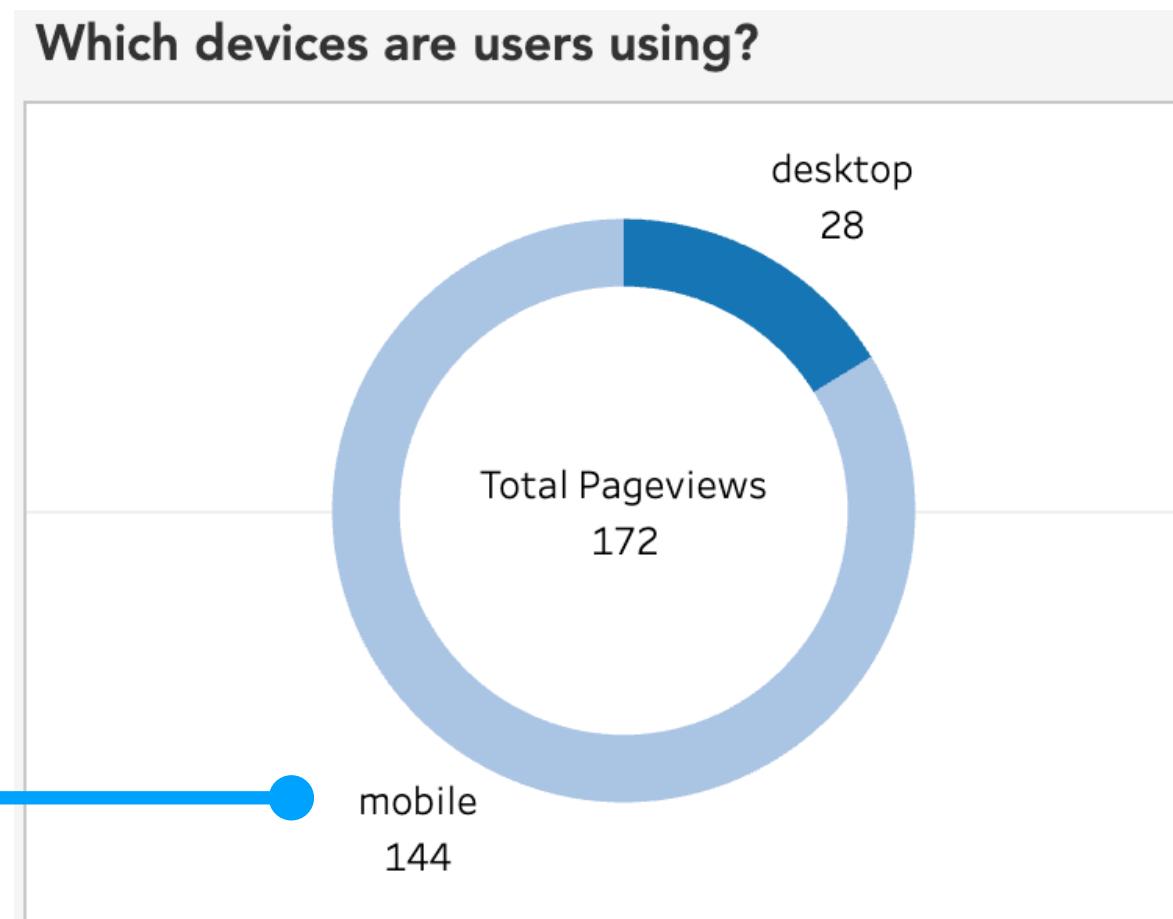
Preliminary EDA

There are differences in devices, operating systems and channel provenance between countries

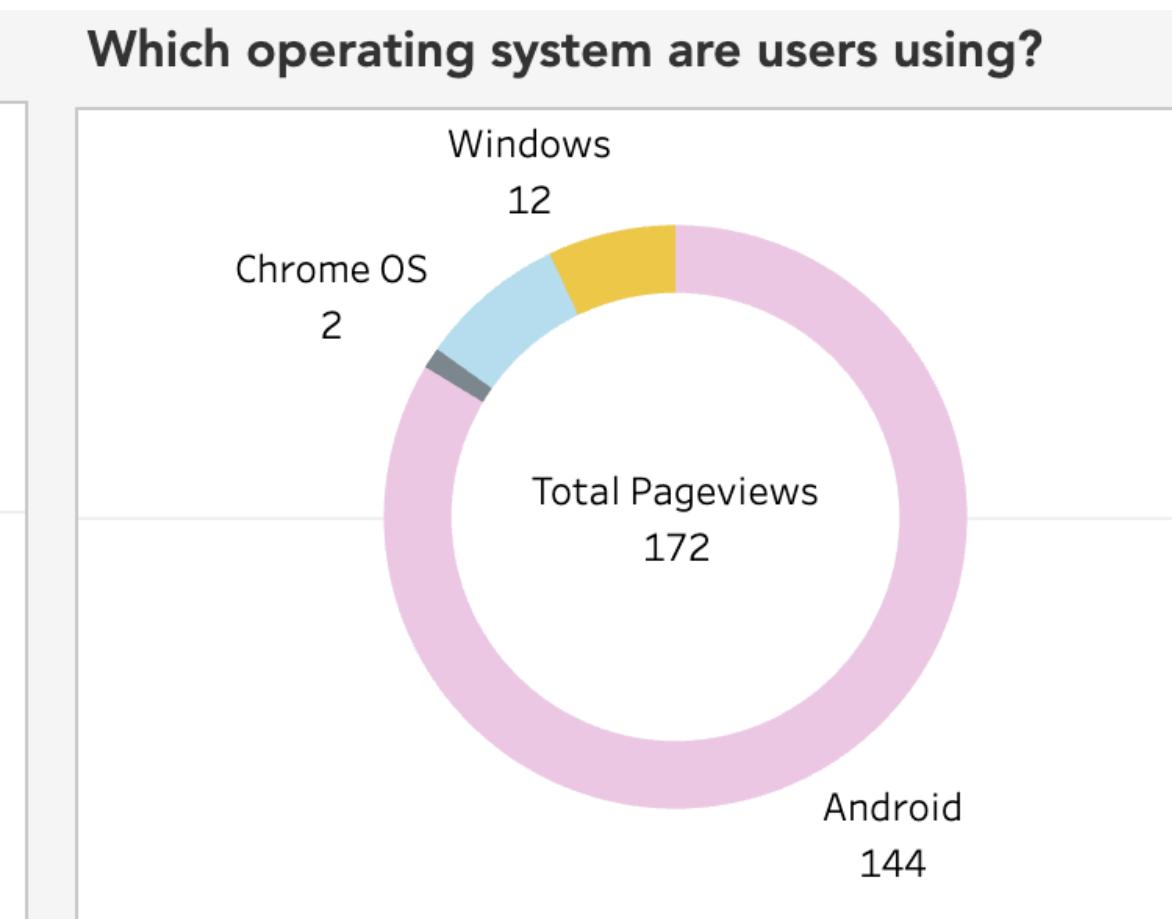
Brazil

Majority of mobile visits, what are some items that visitors are more likely to purchase on mobile?

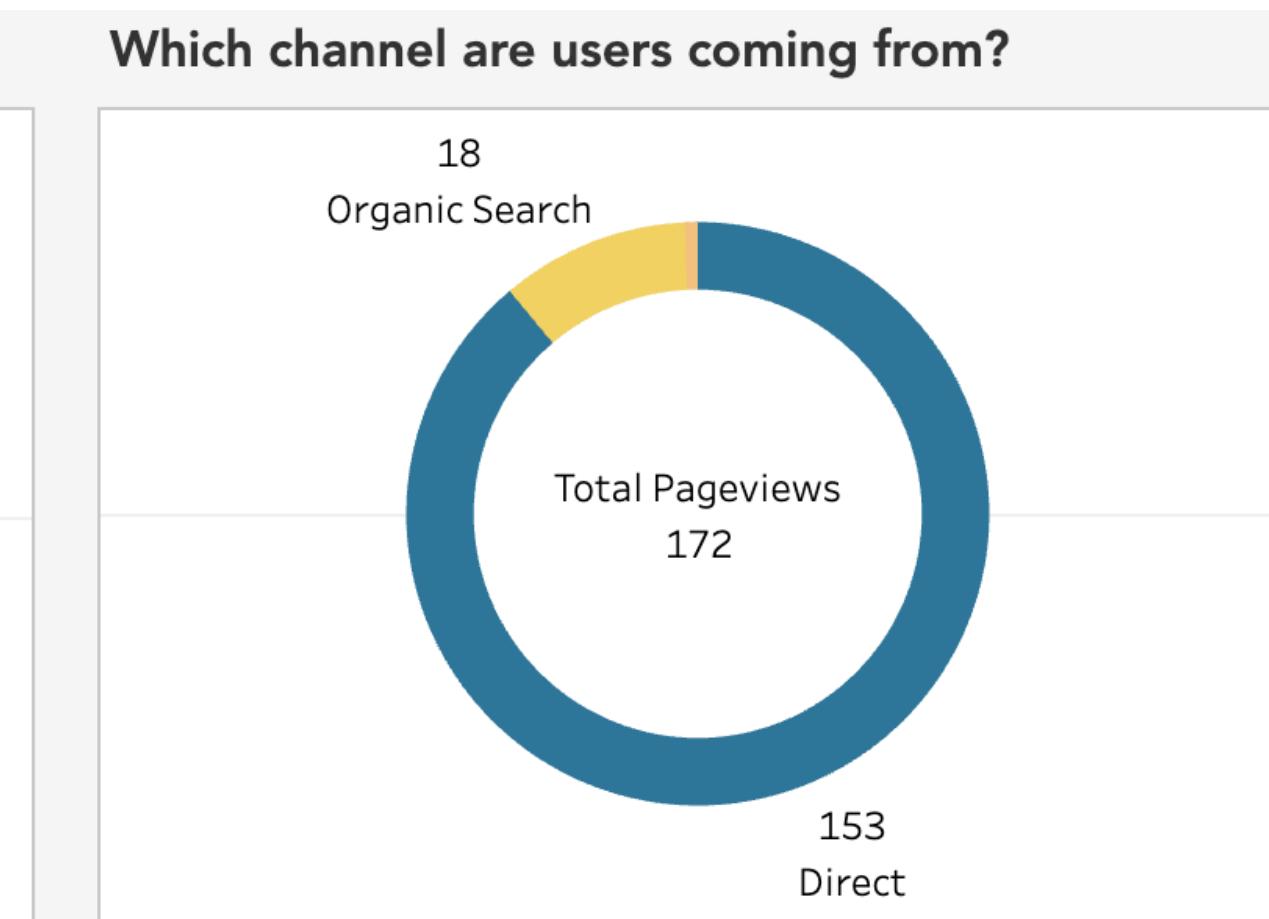
Mobile vs Desktop



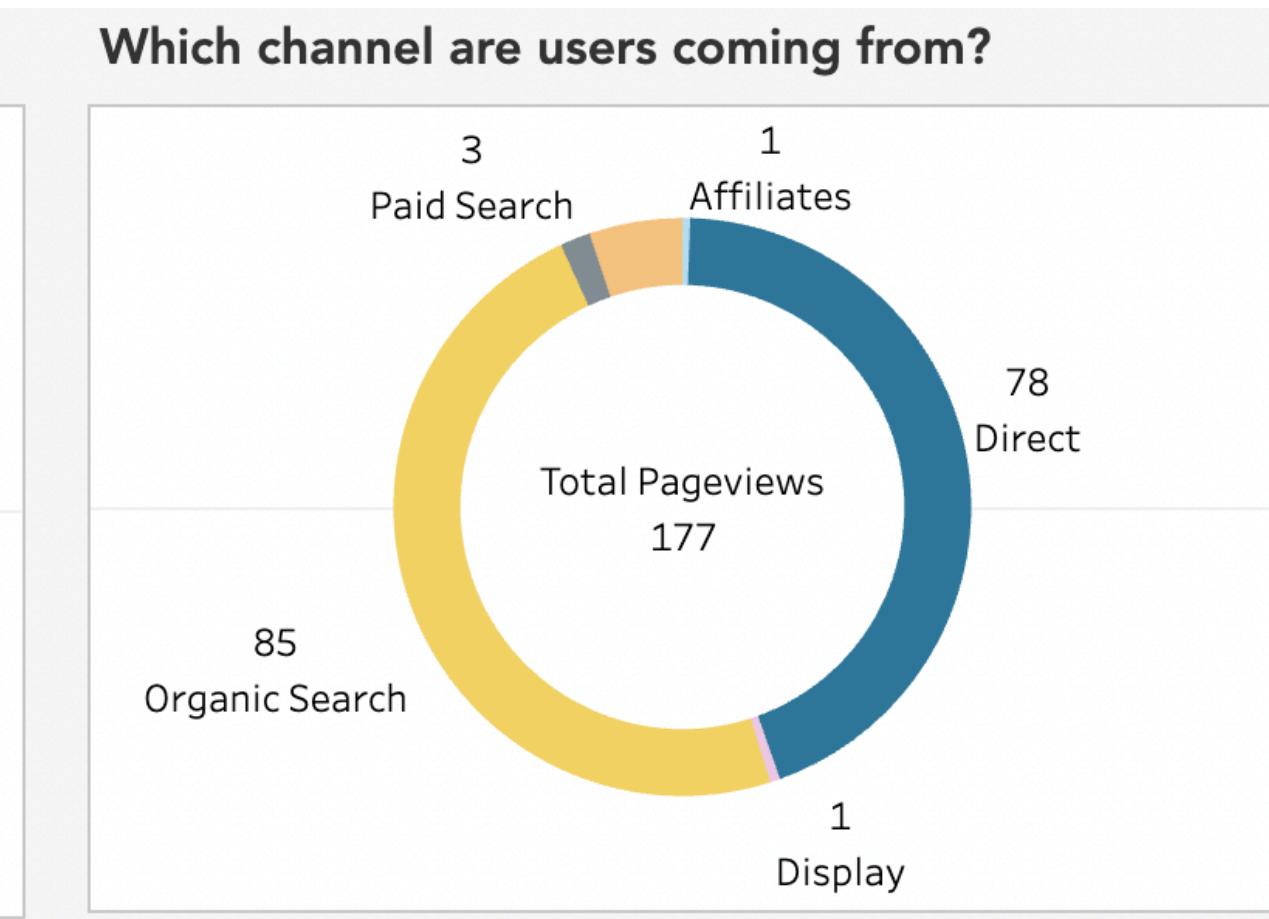
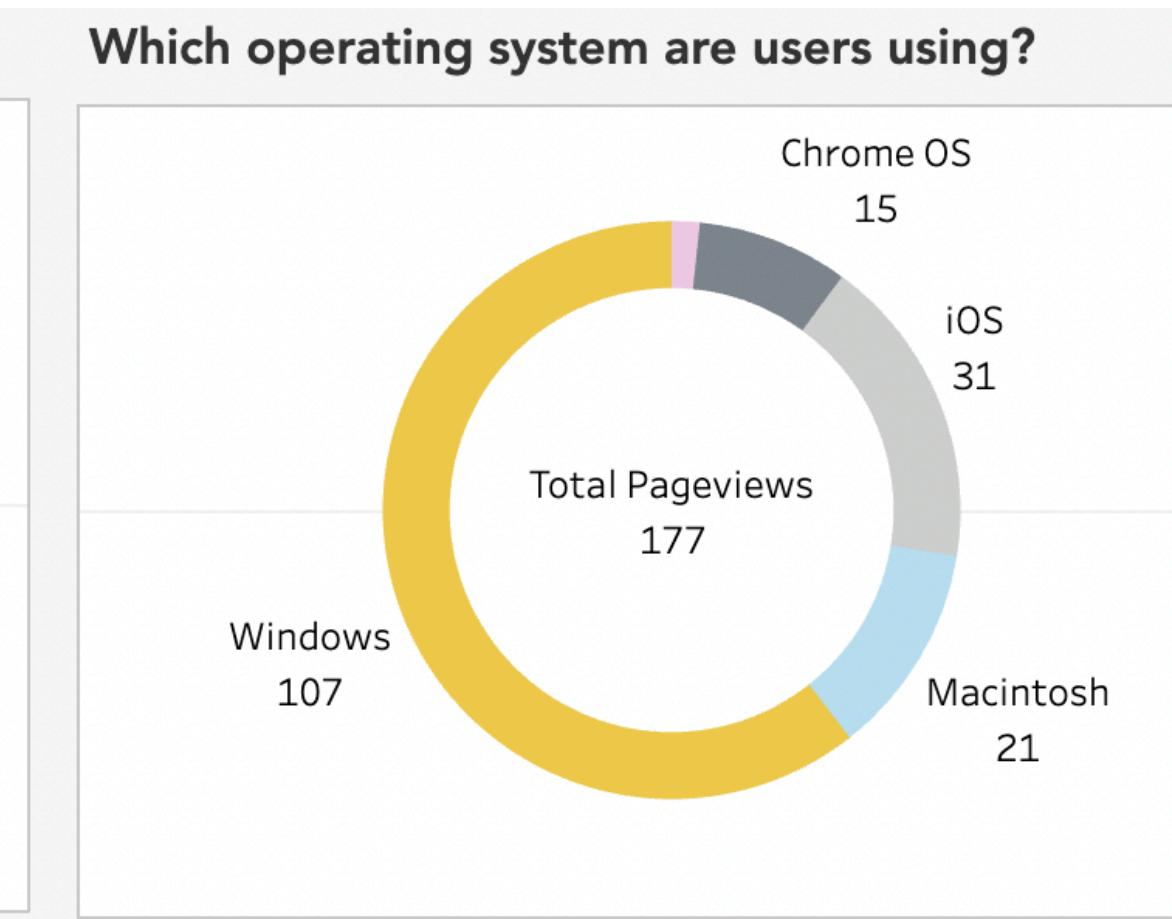
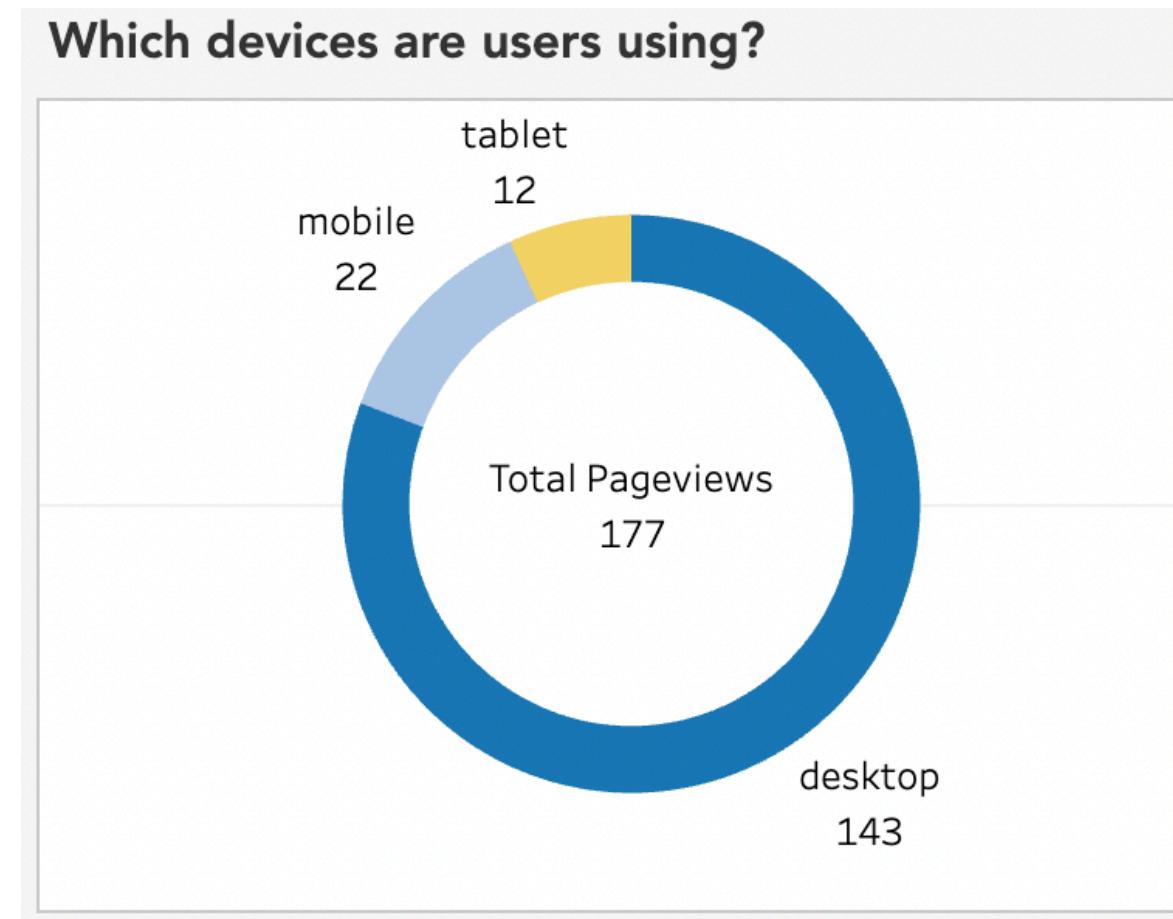
Android vs Windows



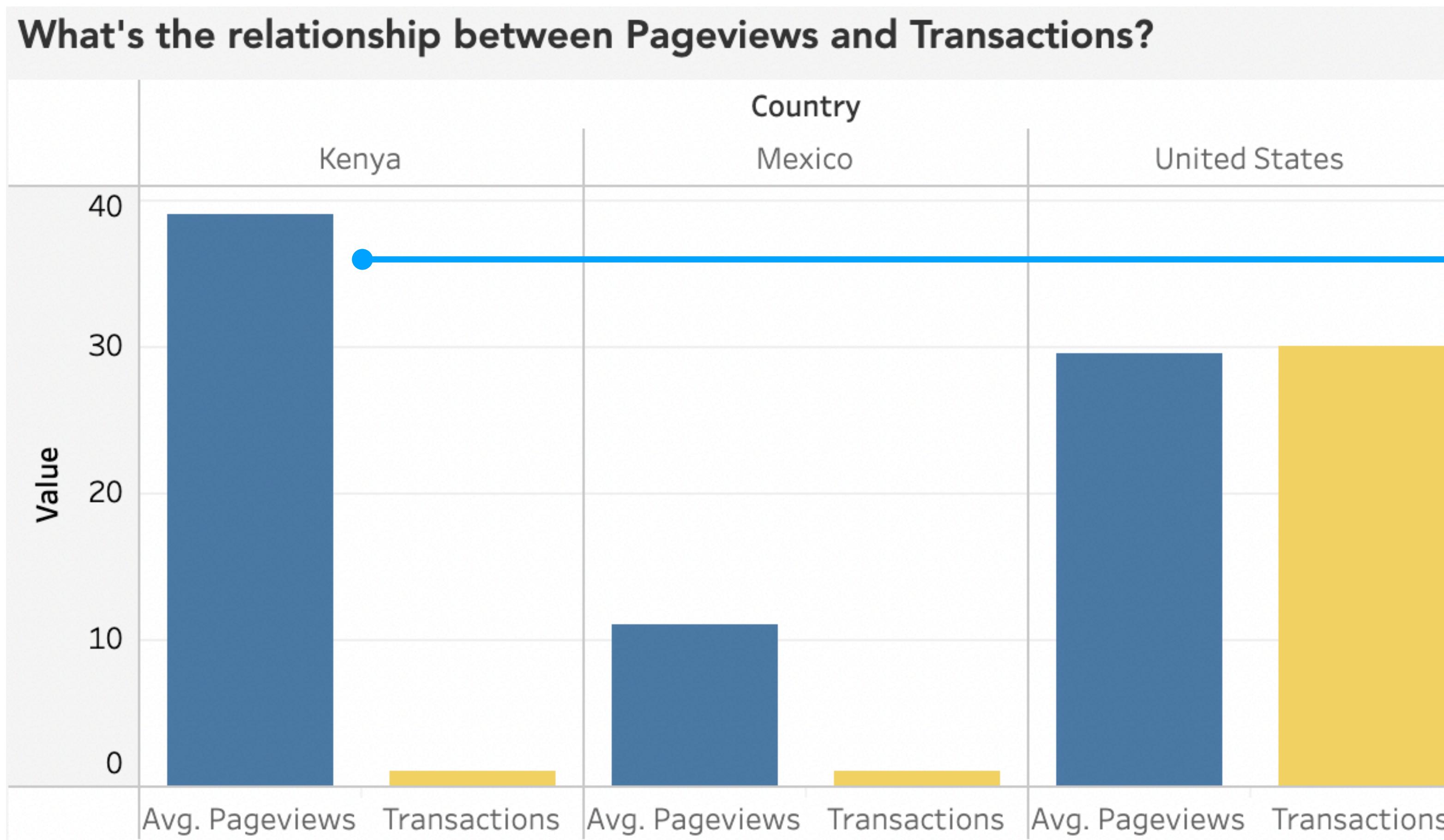
Direct vs Search



Canada



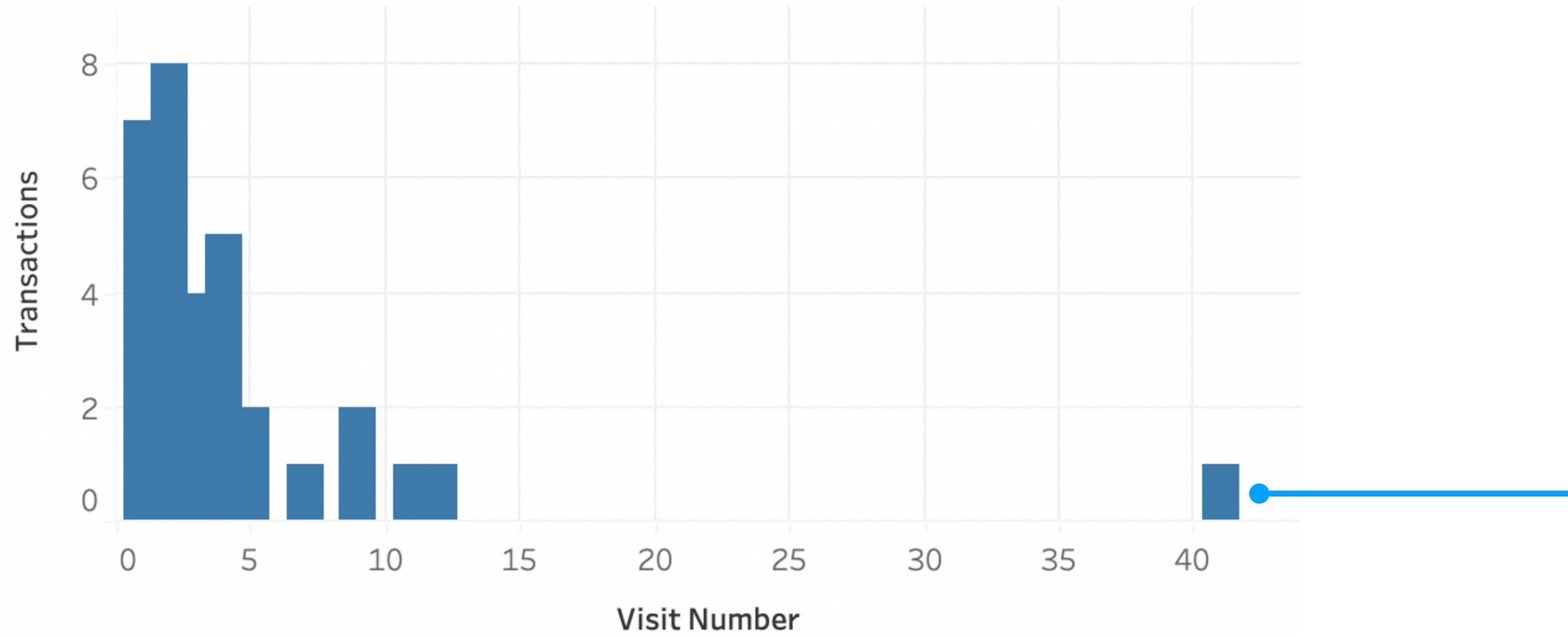
Amongst transactors, the gap between pageviews and transactions is much higher for Kenya visitors



High gap between Pageviews and transactions. A practical implication could be that more lower funnel campaigns need to be deployed to bridge the gap between pageviews and transactions.

The majority of transactions come from new visitors

What's the relationship between visit number and transactions?

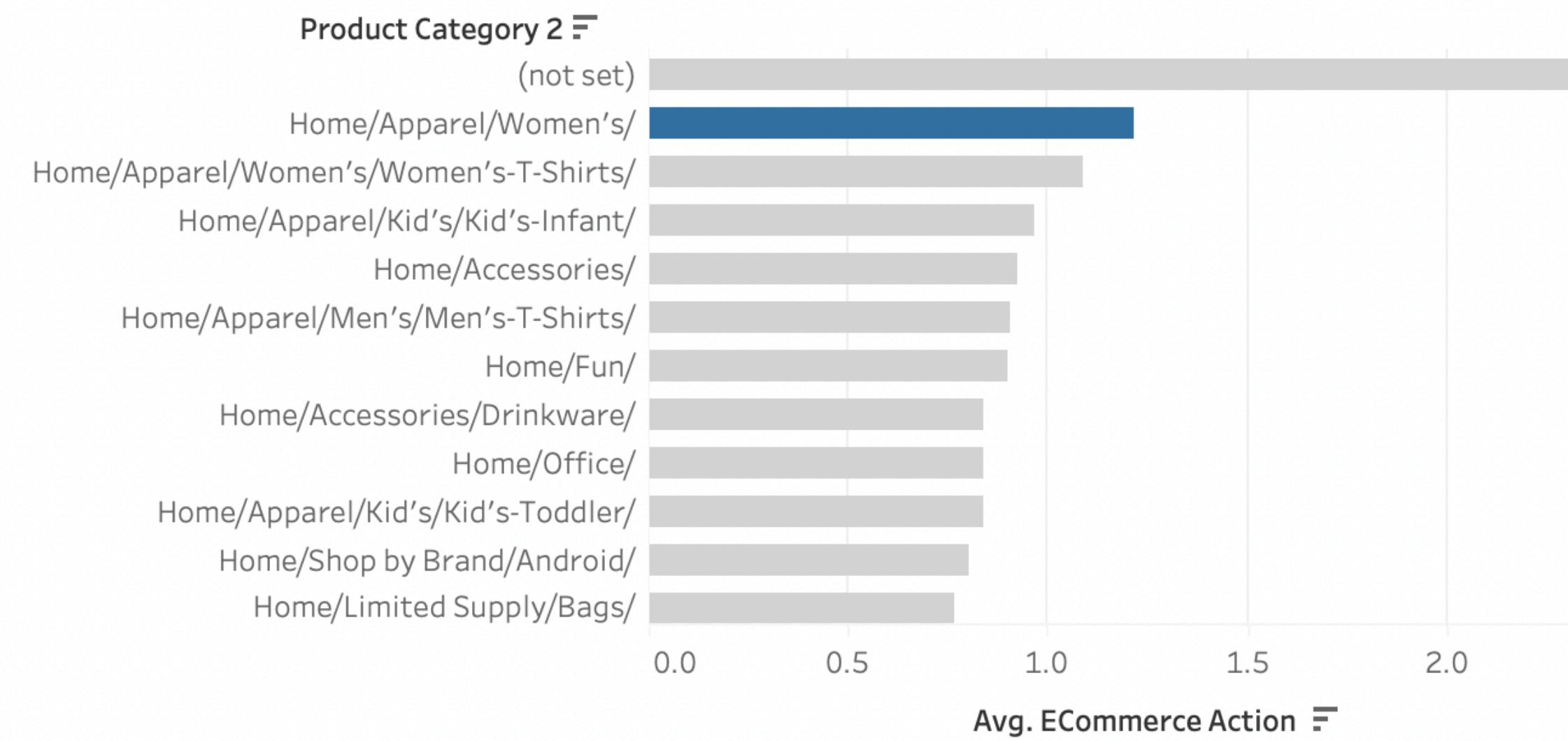


Long tail showing another group of transactors that are recurring visitors that require different targeting strategies.

Categories purchase intent differ by country : UK visitors show higher purchase intent for Drinkware than US visitors

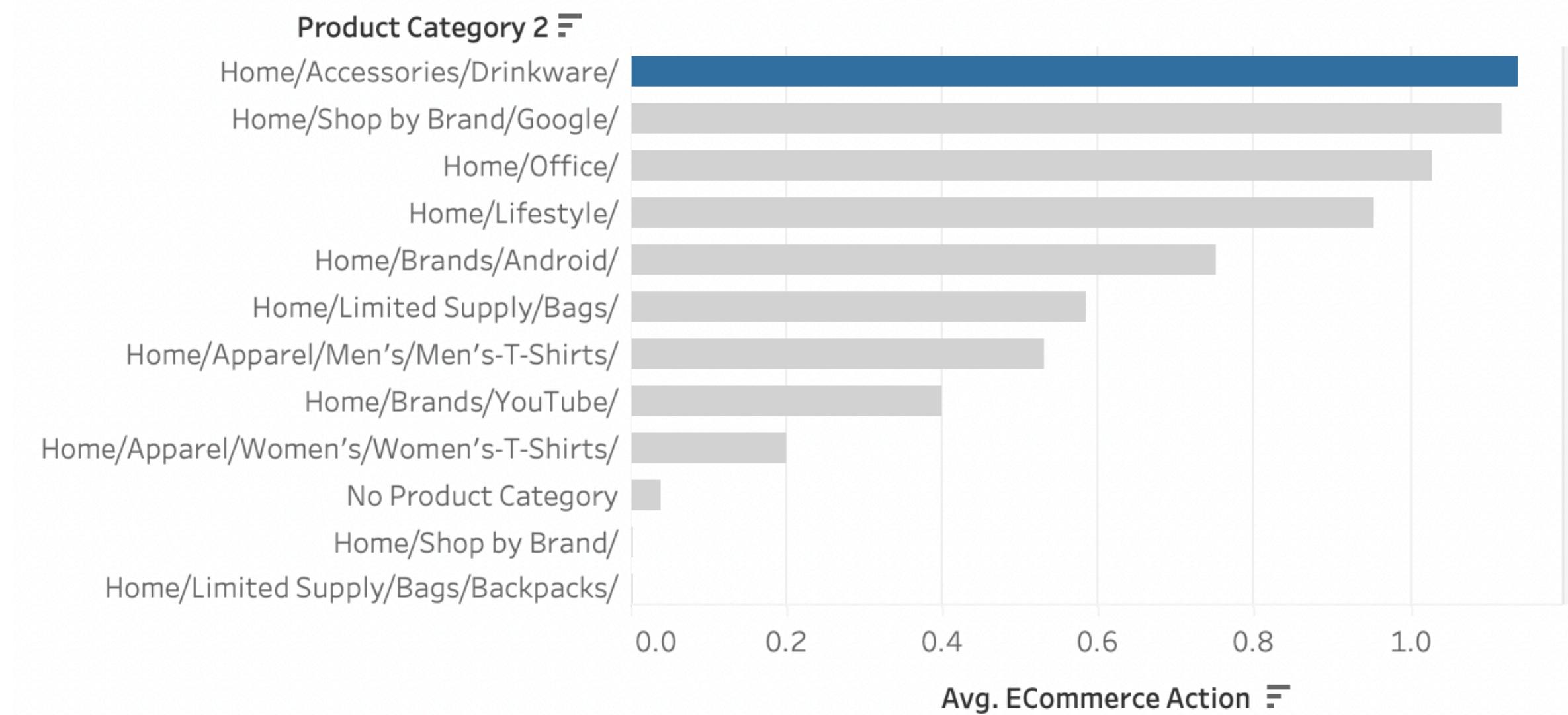
United States: High purchase intent Women's Category

Average E-commerce Action (Upper Funnel: 0 to Lower Funnel: 6)



United Kingdom: High purchase intent Drinkware Category

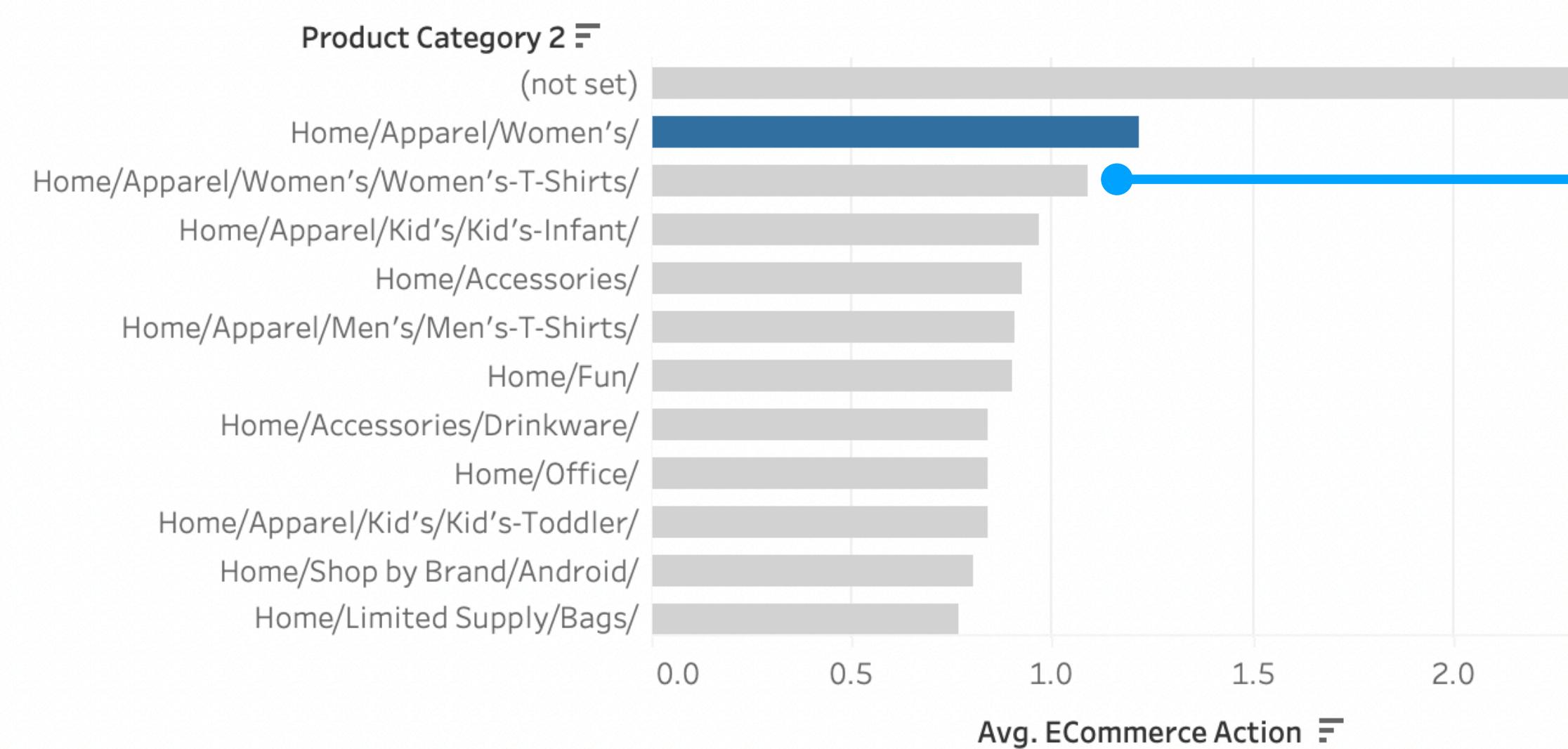
Average E-commerce Action (Upper Funnel: 0 to Lower Funnel: 6)



While US visitors shows high purchase intent for Women's Category, UK visitors tend to exit most on this category

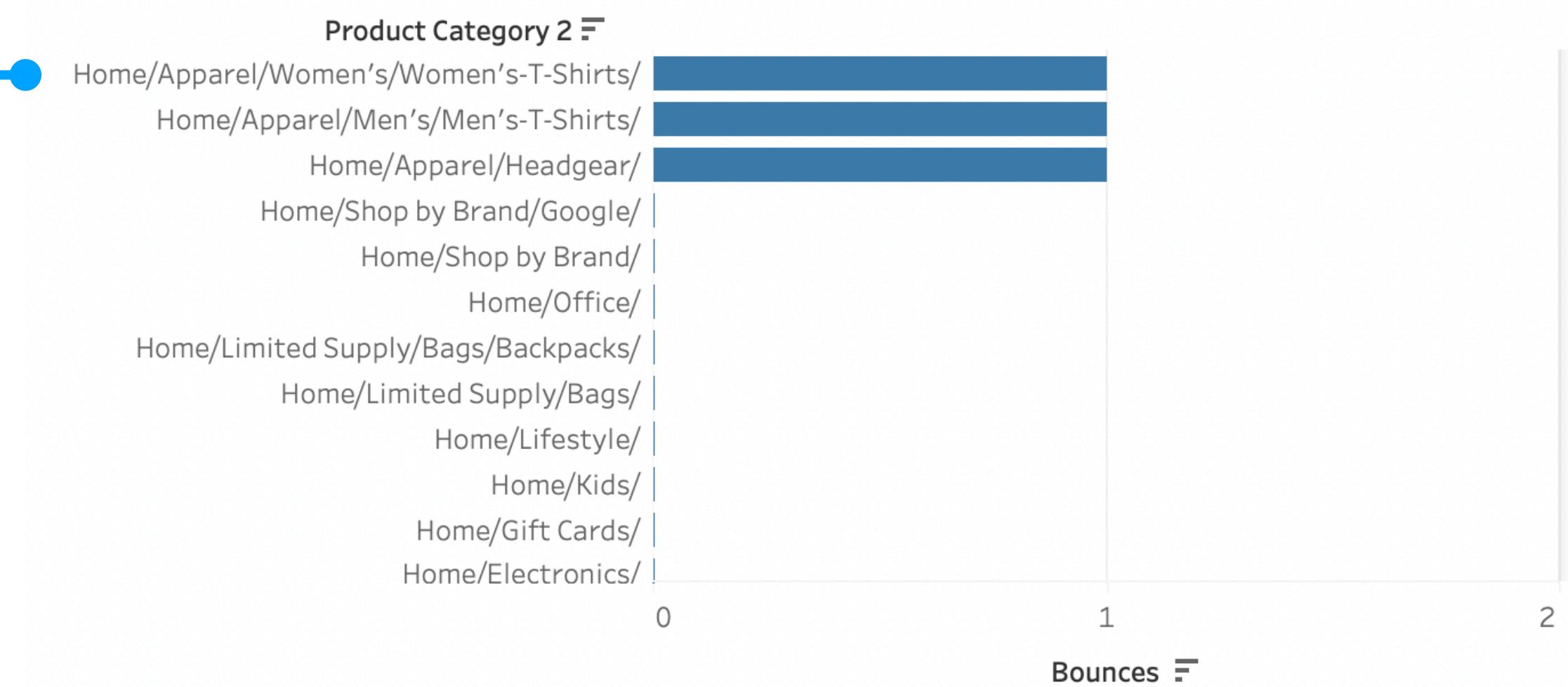
United States: High purchase intent Women's Category

Average E-commerce Action (Upper Funnel: 0 to Lower Funnel: 6)



United Kingdom: Highest Bounce is Women's Category

Sum of Bounces by Product Category



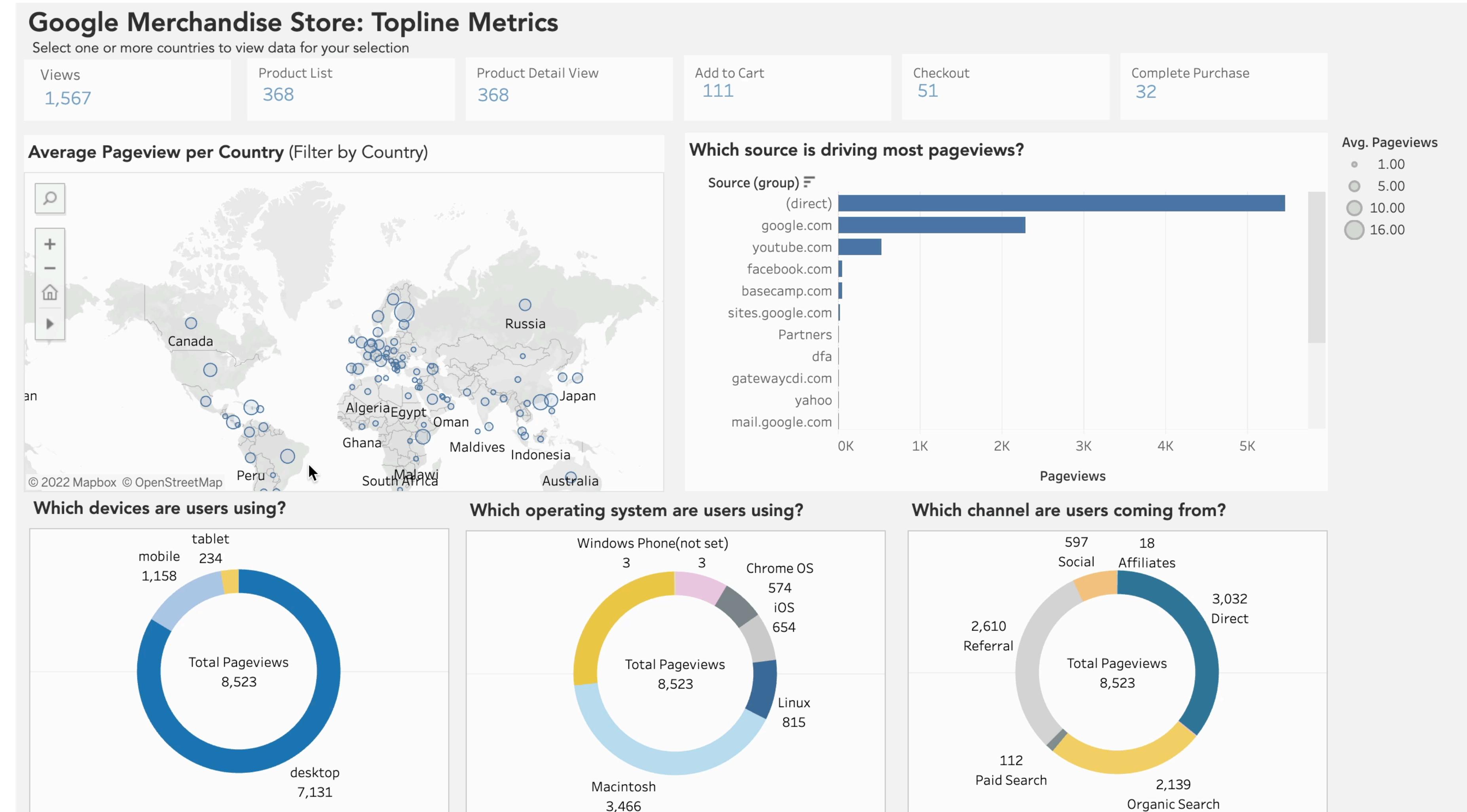
Dashboards for more insights

The findings presented are a select number of insights. To further explore the data a series of [interactive dashboards](#) are linked below.

Dashboard 1

Topline Metrics

Filter by country, to learn about users behavior, source, channel, devices and operating system.



Dashboard 2

Transactors Profile

Data regarding transactors: average visit time, visit number, landing page...

Transactors Profile (Filter by Country)

Average Time on Site
923.3

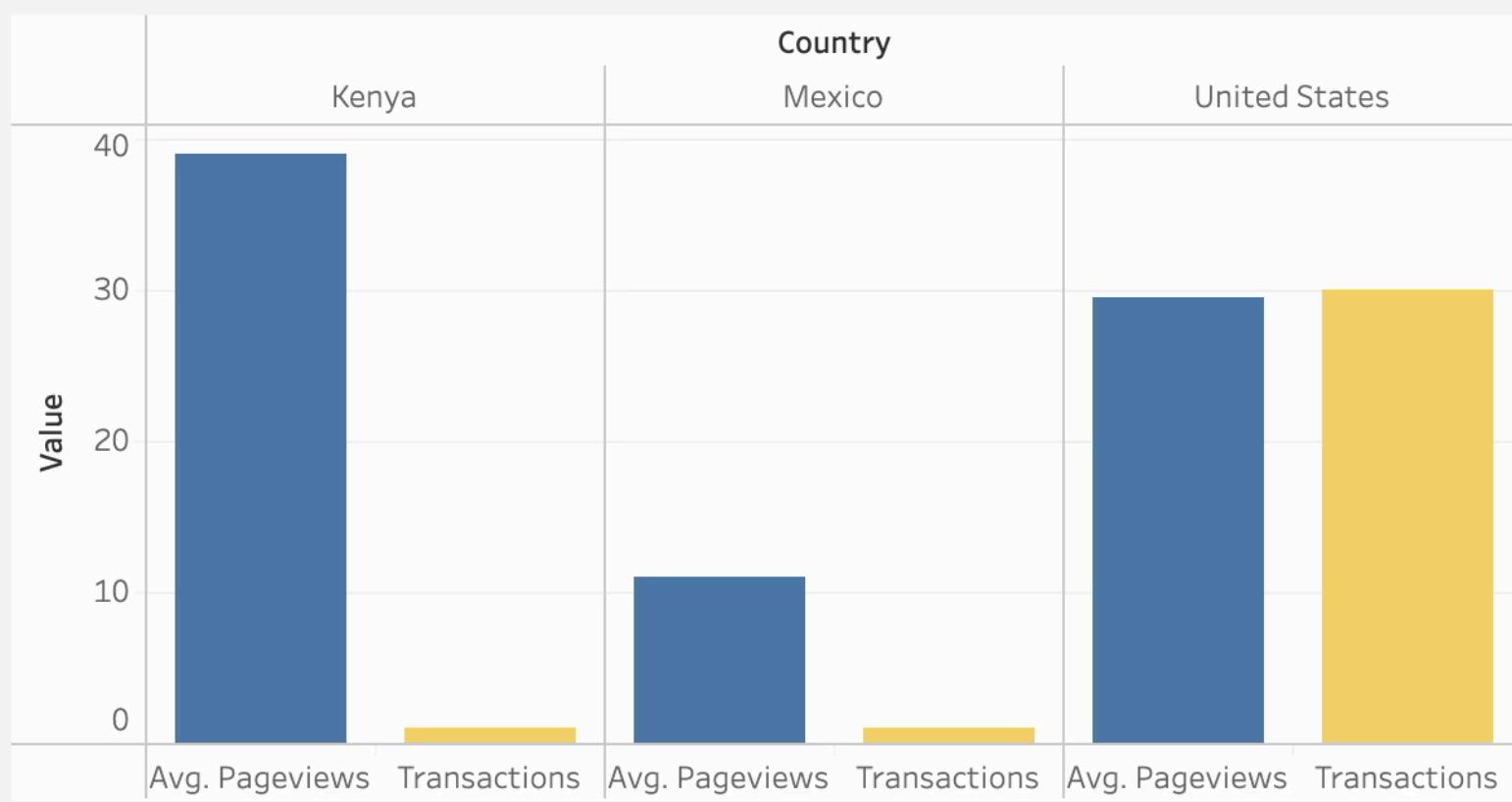
Average Pageviews
287.1

Average Visit Number
2.782

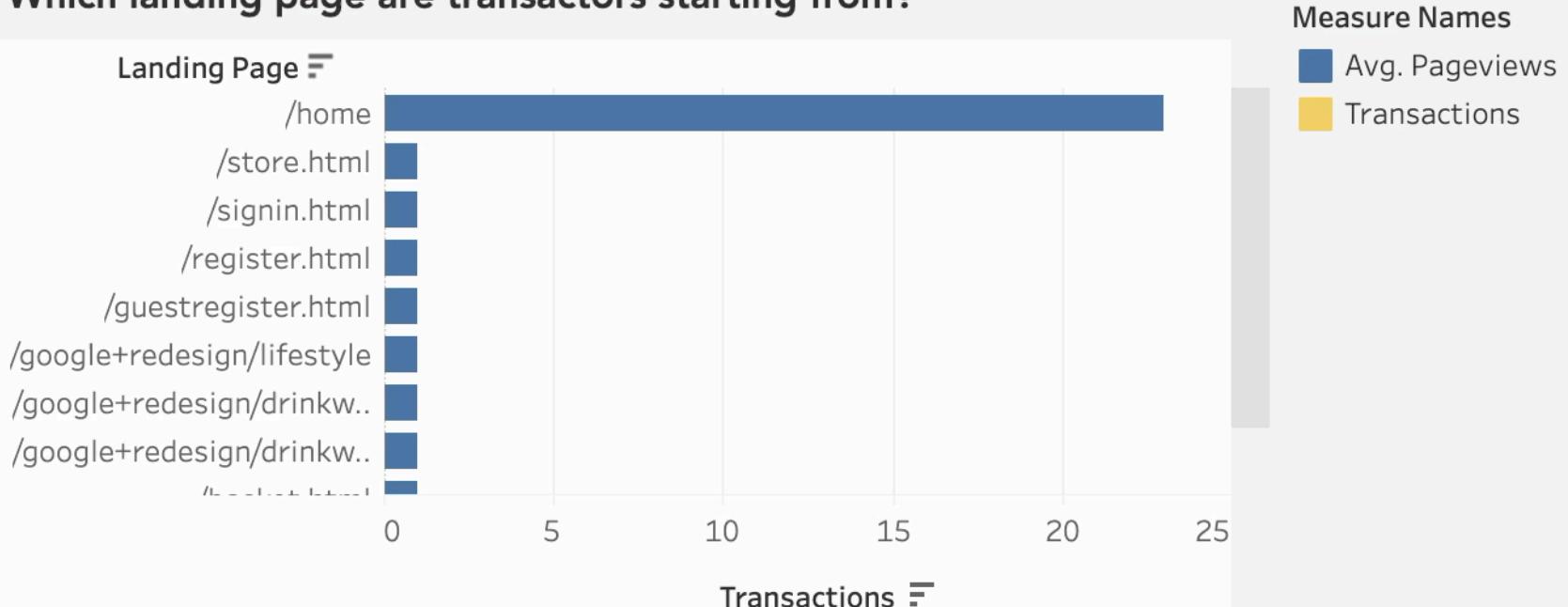
% of New Visits
21.88%

Country
(All)

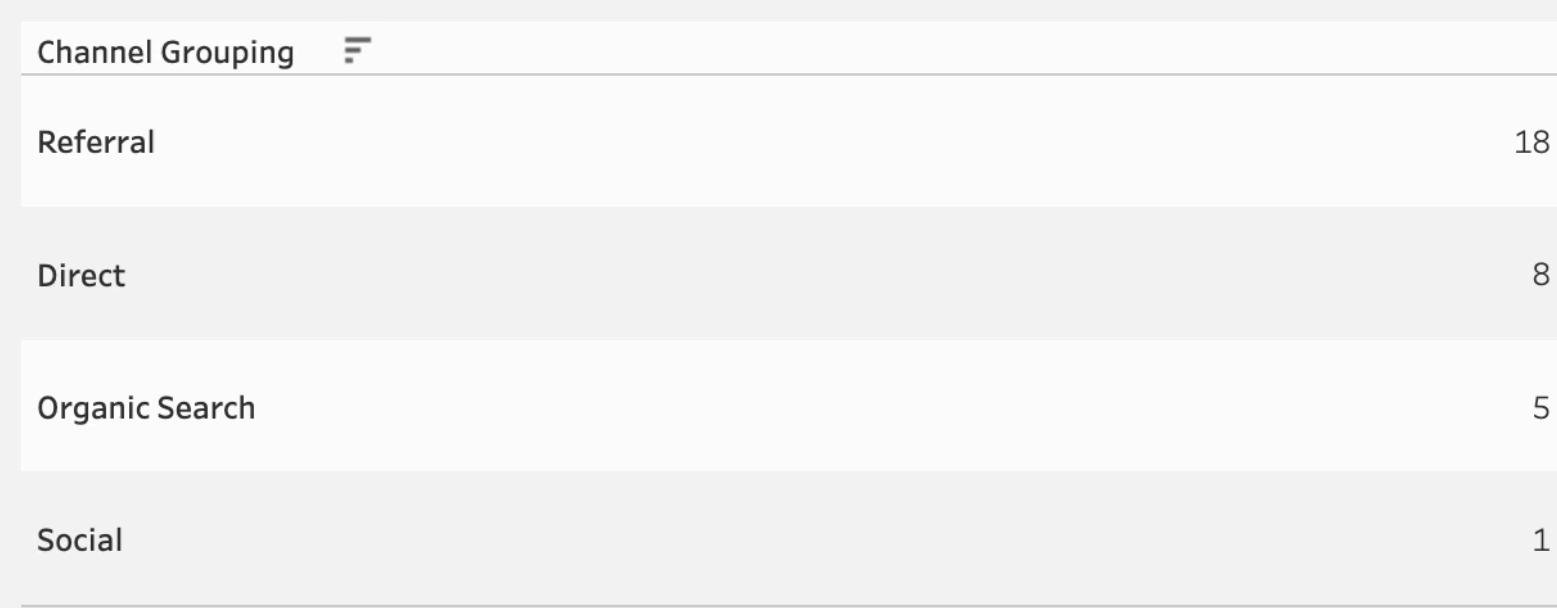
What's the relationship between Pageviews and Transactions?



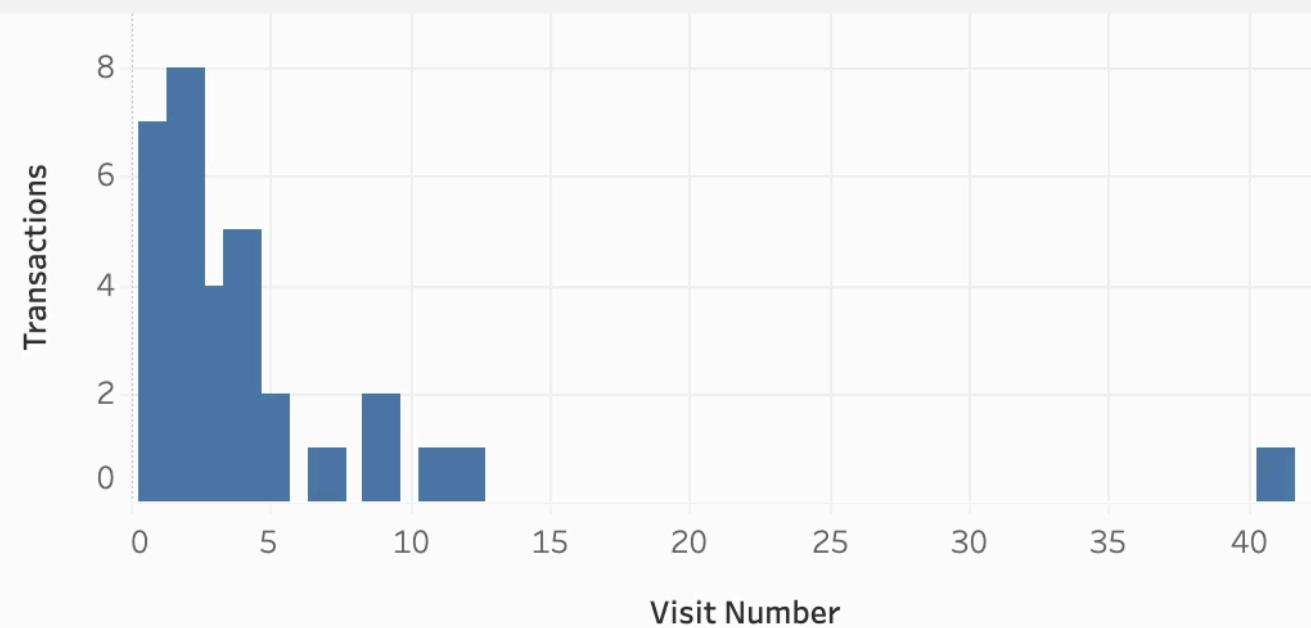
Which landing page are transactors starting from?



Which channel is driving most transactions?



What's the relationship between visit number and transactions?



Dashboard 3

Product Categories

Filter by country, to learn about purchase intent by product category.

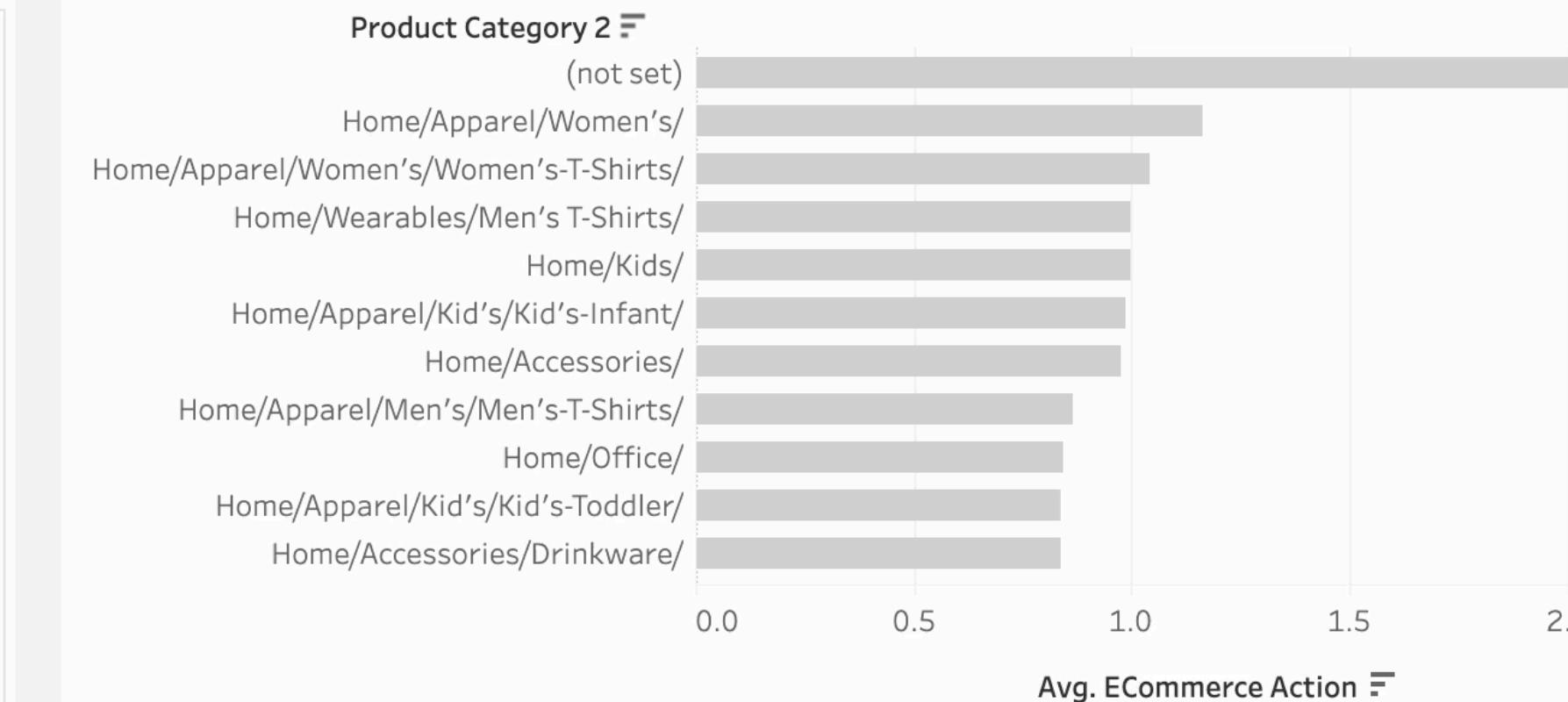
Google Merchandise Store : E-commerce Actions and Product Categories

Select one or more countries to view data for your selection

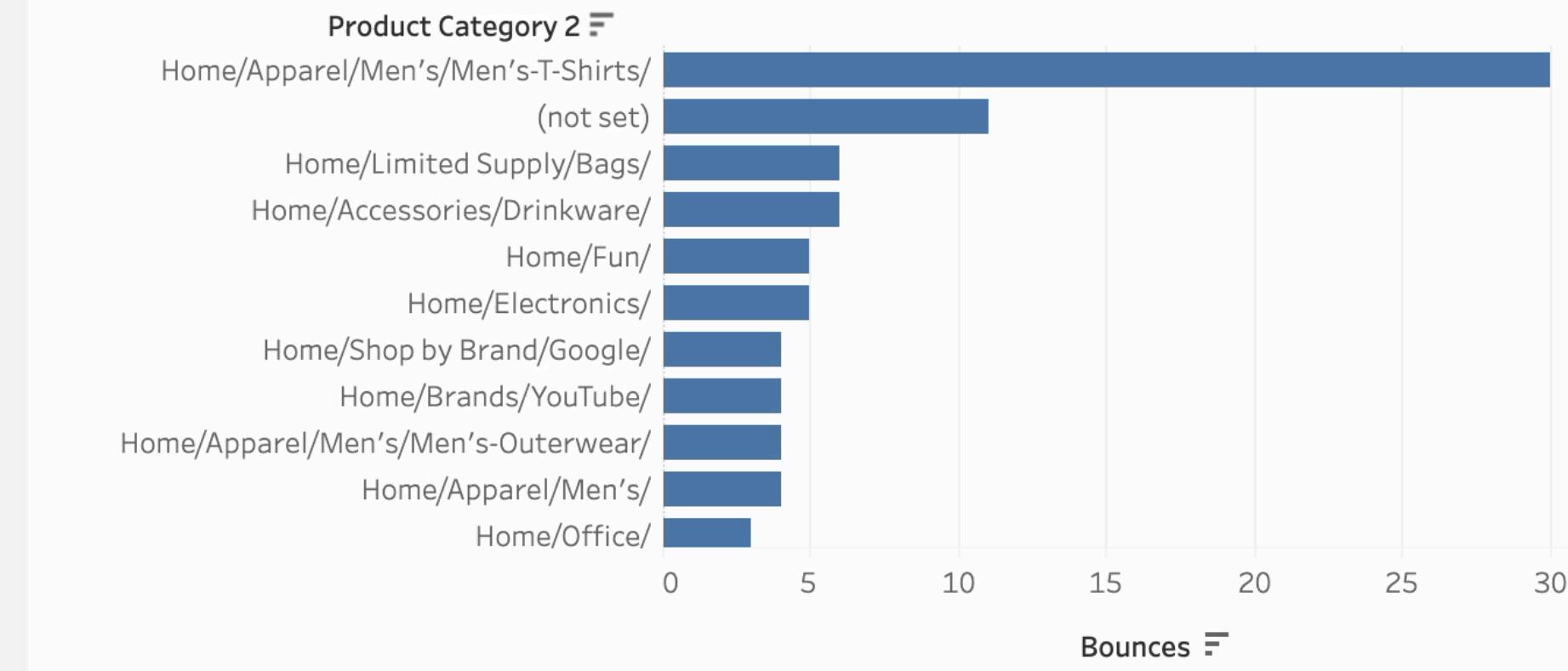
Map of Visits (Click to Filter)



Average E-commerce Action (Upper Funnel: 0 to Lower Funnel: 6)



Sum of Bounces by Product Category



Future Work for Modeling

Additional Data Points: Ad content, Ad type, historical data for each user from visit 1 to last visit grouped as one data point instead of only using last visit.

Comparison between clusters and EDA: Do clusters reveal actionable groups across geographies?

Thank you