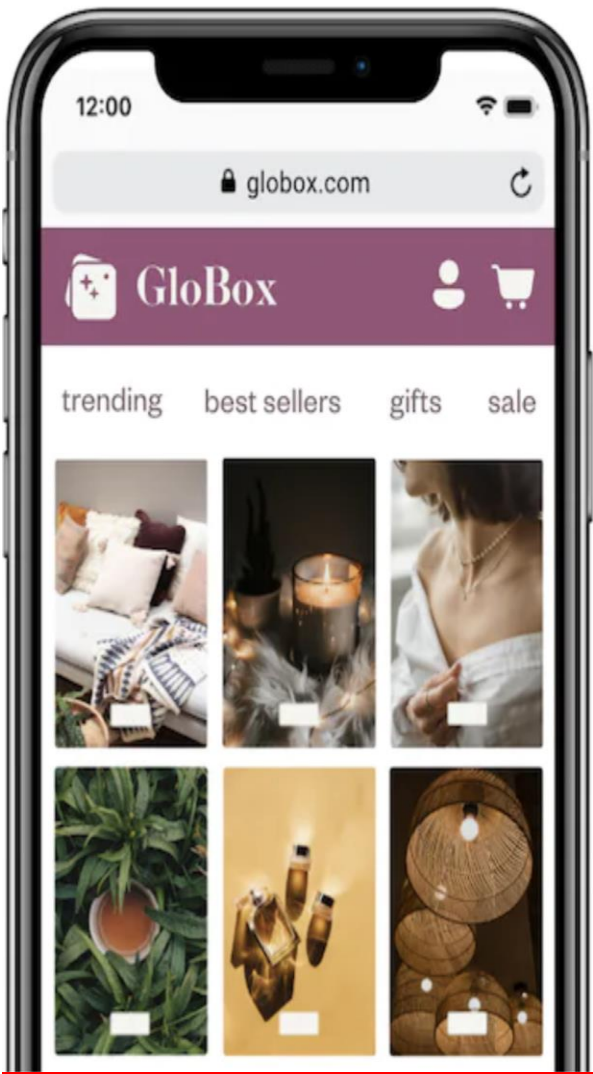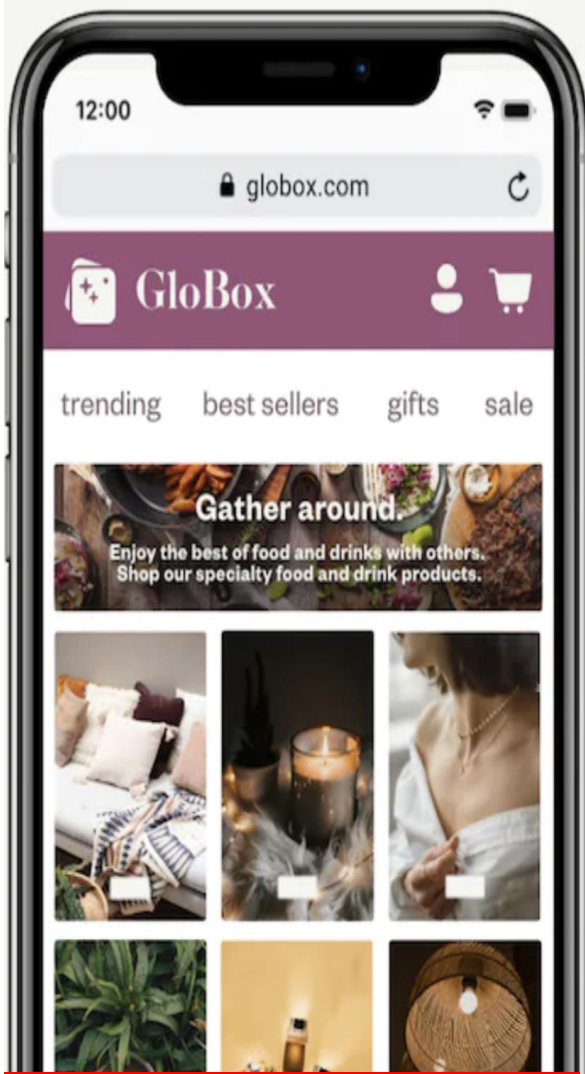- A/B Test with 48.9k sample size for 13 days

- Goal: Increase conversion rate and average amount spent.

- Sample A: 24.3k users.

- Sample B: 24.6k users

Control (A)

Treatment (B)

DATA SUMMARY

Sample Size	Conversion Rate	Average Amount Spent	Groups	Sample	Conversion Rate	Average Amount Spent
			A	24343	3.92%	$3.38
48943	4.28%	$3.38	B	24600	4.63%	$3.39

- This table reveals that group B is better that A both in terms of conversion rate and average amount spent.
- The conversion rate & average amount spent of group B is even better than that of the entire sample.

Conversion Rate by Group

Group	Conversion Rate
A	3.92%
B	4.63%

Group
- A
- B

Conversion Rate

Average Amount Spent by Group

Group	Avg. Amount Spent
A	$3.37
B	$3.39
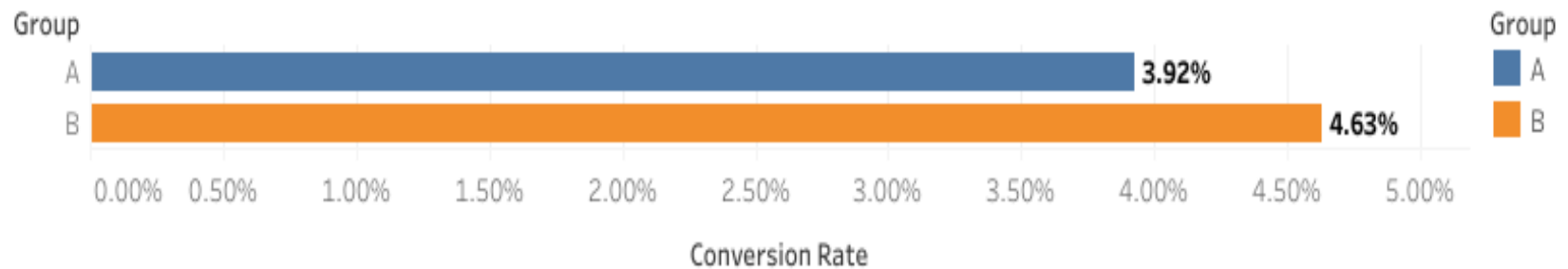
Group
- A
- B
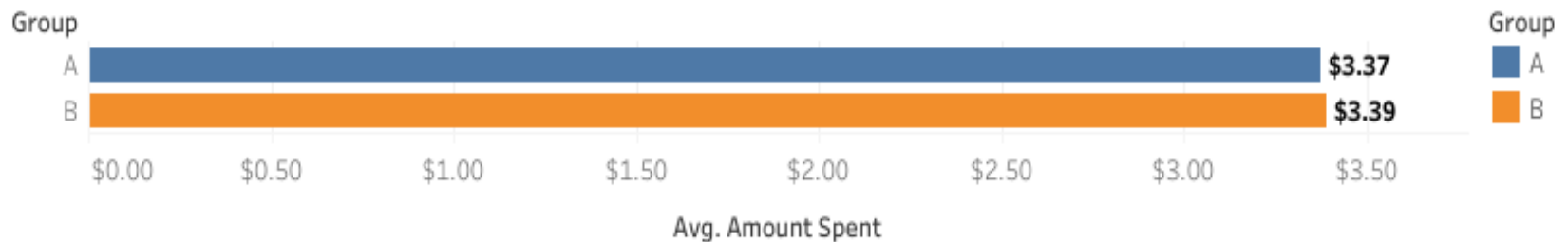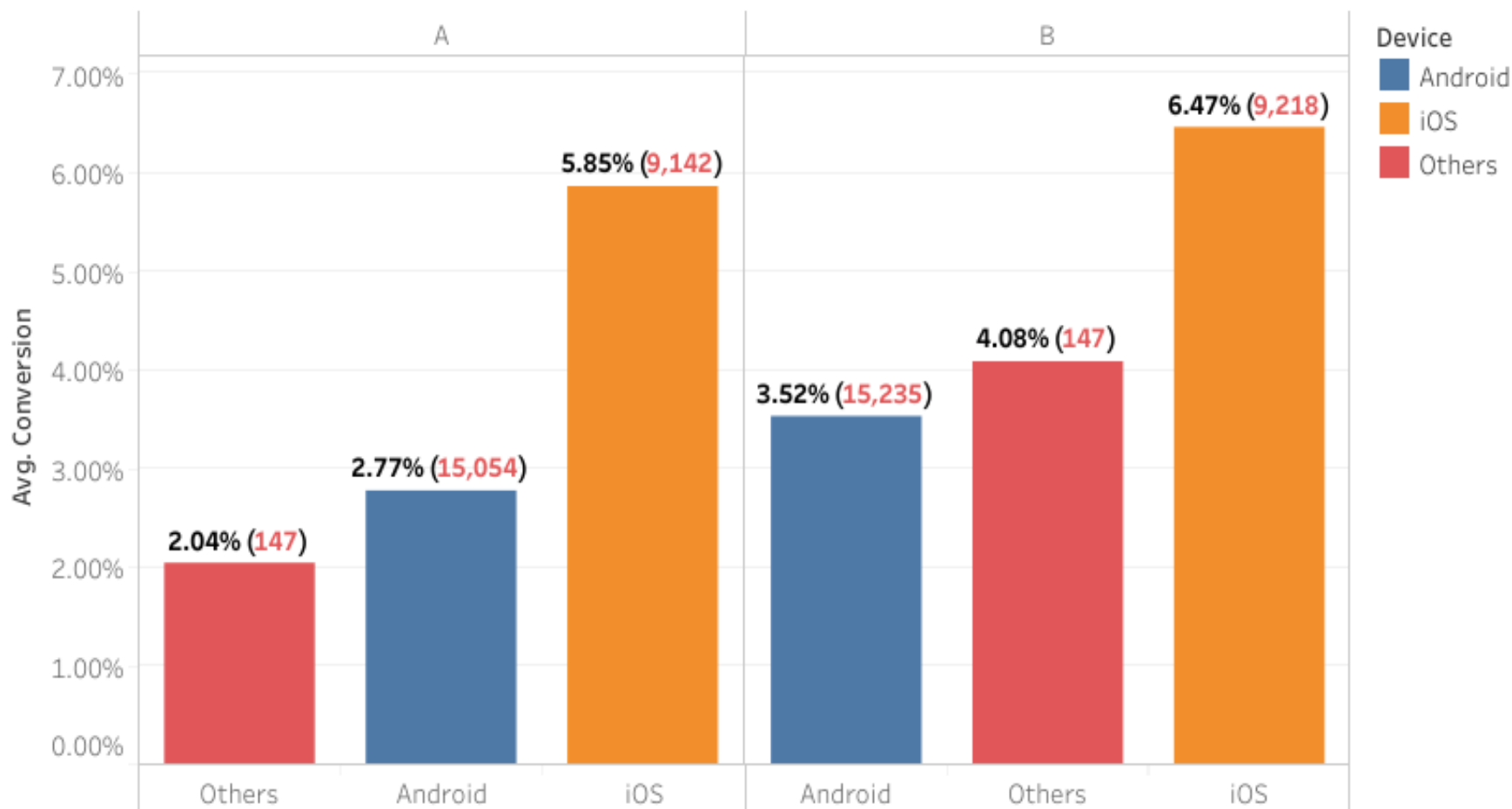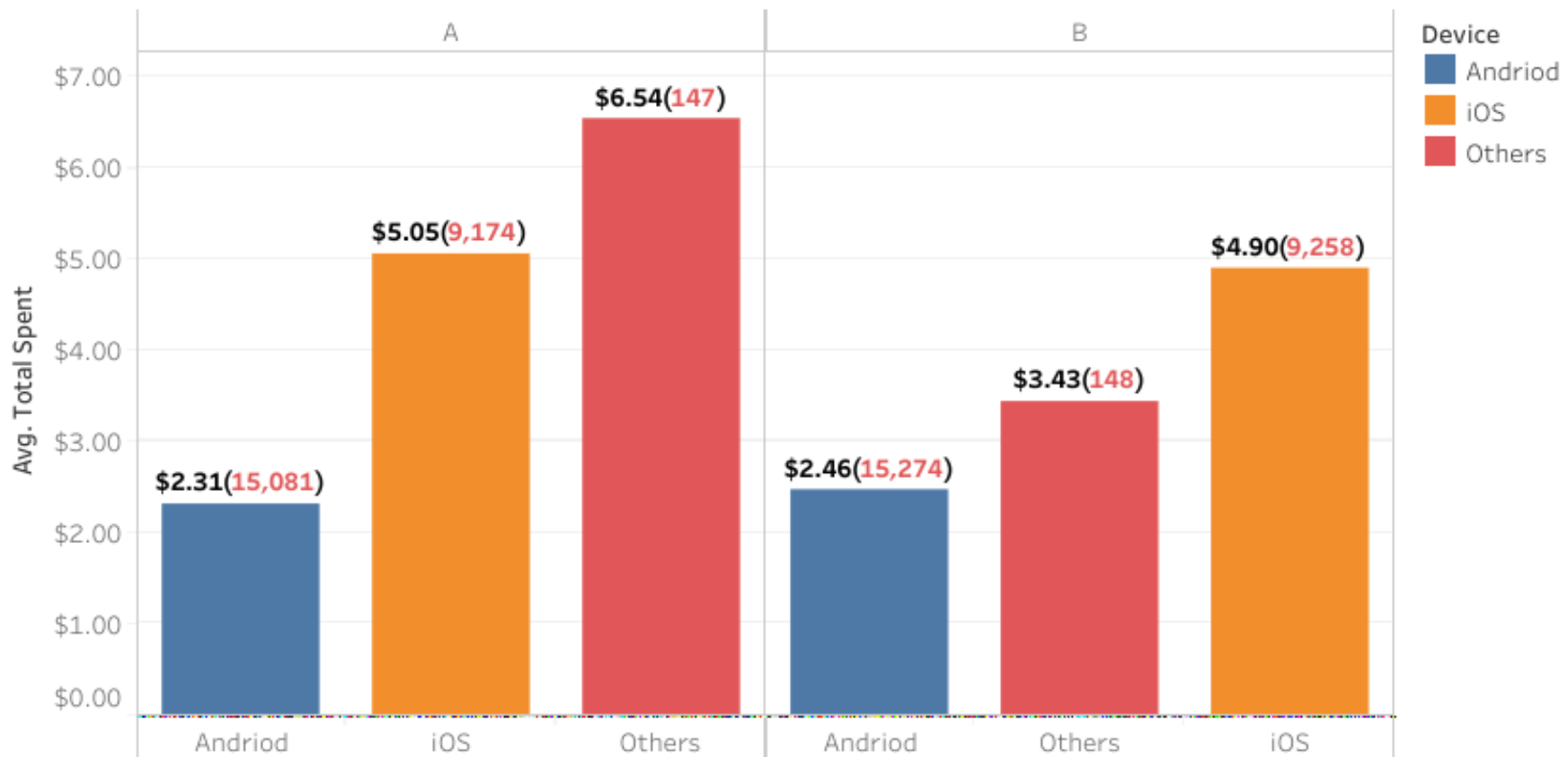
Avg. Amount Spent

- Sample B had a better conversion rate and slightly higher average amount spent.
- This implies that the banner might have influenced the decision of users exposed to sample B

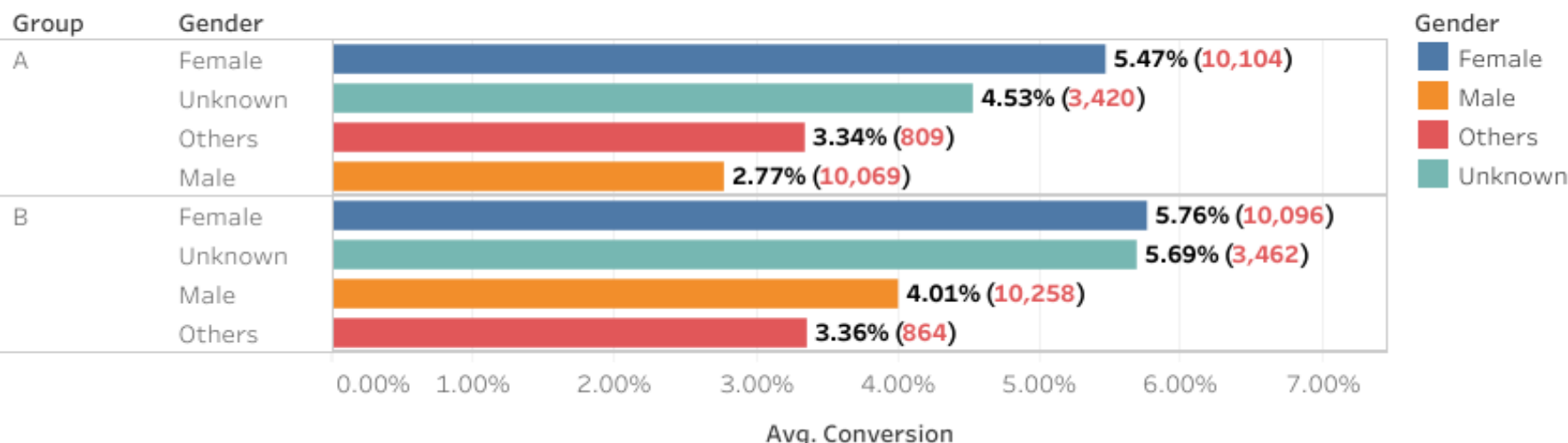# Conversion Rate by Device

- iOS has the highest conversion rates in both groups. This implies that a marketing campaign can be targeted at this group.

- In group B, users of other devices has the second conversion rate, however, the small number of their population suggests that this may be superficial. Thus, it will be logical to deduce that Android users are the next to the iOS users in both groups

Average Amount Spent by Device
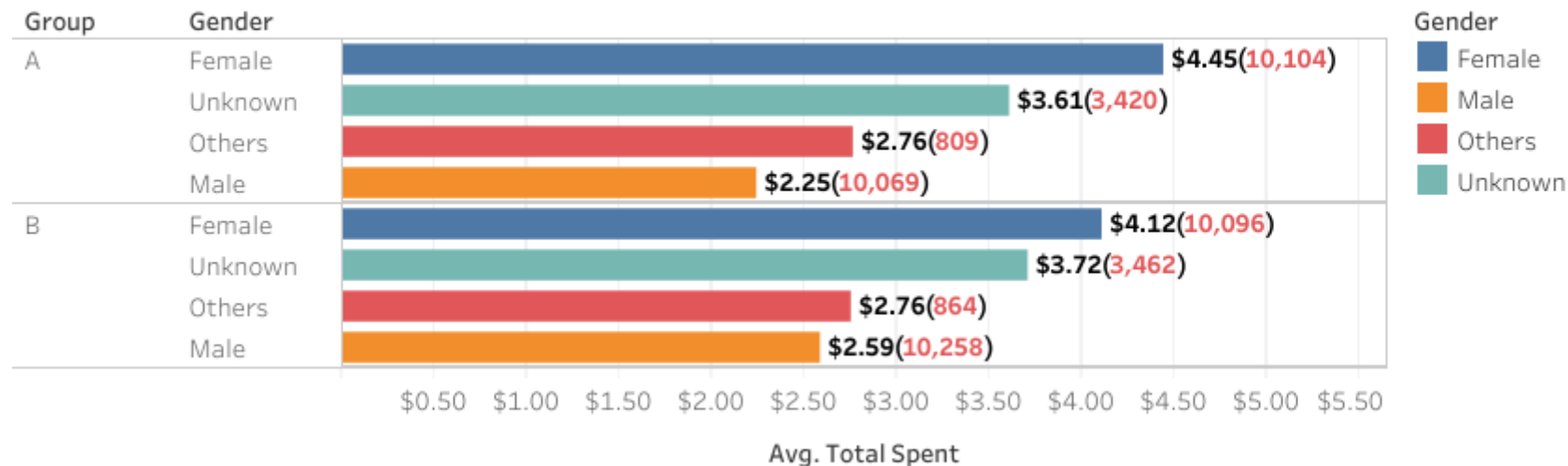

- iOS has the highest average amount spent in both groups. This confirm the ideal of a marketing campaign targeted at this group.

- In group B, users of other devices has the second average amount spent, however, the small number of their population suggests that this may be superficial. Thus, it will be logical to deduce that Android users are likely to spend more.

Conversion Rate by Gender

Group	Gender	Avg. Conversion
A	Female	5.47% (10,104)
	Unknown	4.53% (3,420)
	Others	3.34% (809)
	Male	2.77% (10,069)
B	Female	5.76% (10,096)
	Unknown	5.69% (3,462)
	Male	4.01% (10,258)
	Others	3.36% (864)

Gender
- Female
- Male
- Others
- Unknown

Average Amount Spent by Gender

| Group	Gender	Avg. Total Spent
A	Female	$4.45 (10,104)
	Unknown	$3.61 (3,420)
	Others	$2.76 (809)
	Male	$2.25 (10,069)
B	Female	$4.12 (10,096)
	Unknown	$3.72 (3,462)
	Others	$2.76 (864)
	Male	$2.59 (10,258)

Gender
- Female
- Male
- Others
- Unknown

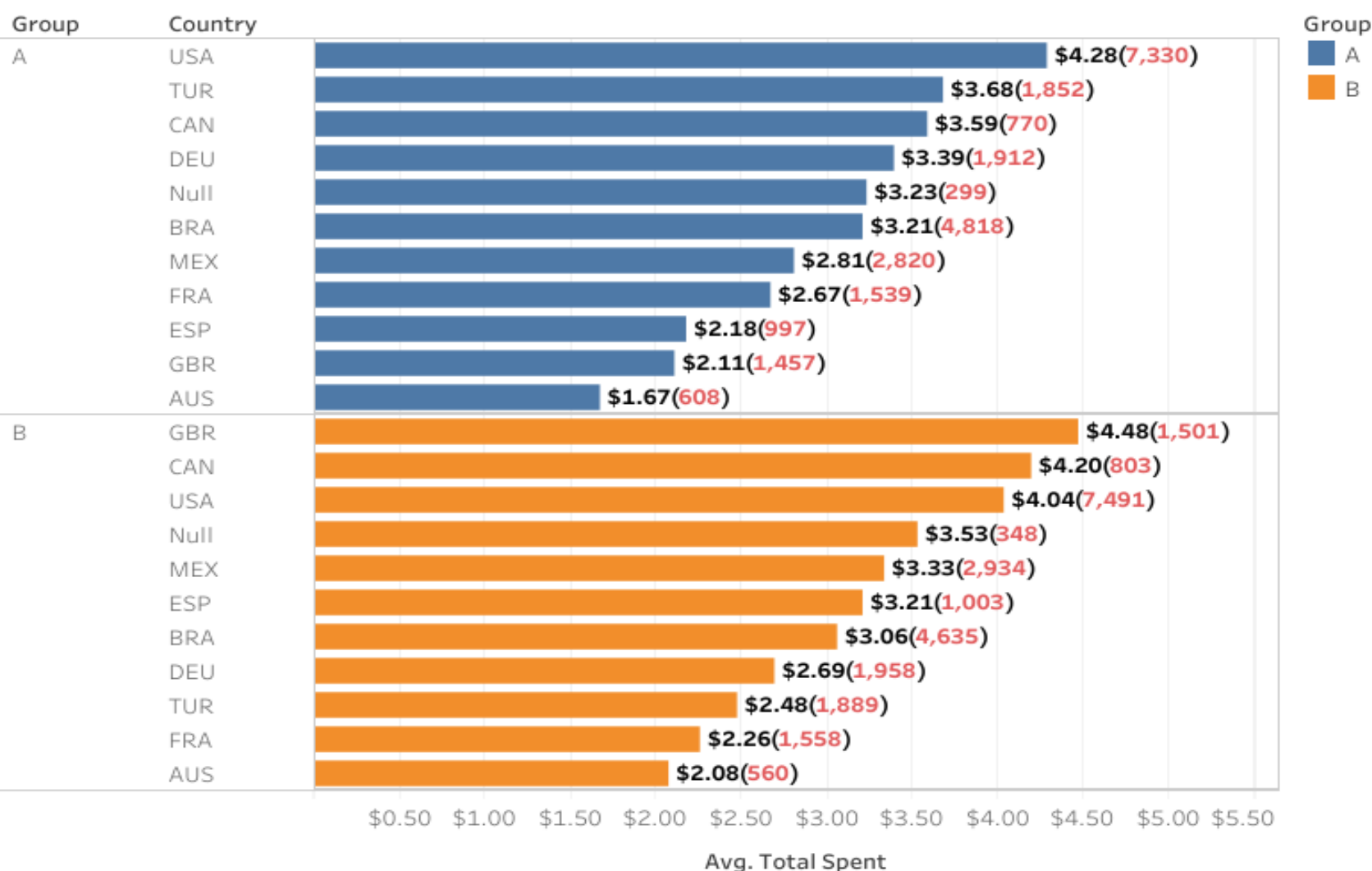- Female appeared to enjoy a higher conversion rate in both groups.

- They also recorded the highest average amount spent in both group. This suggests that different marketing campaigns may be considered for both gender

Conversion Rate by Country
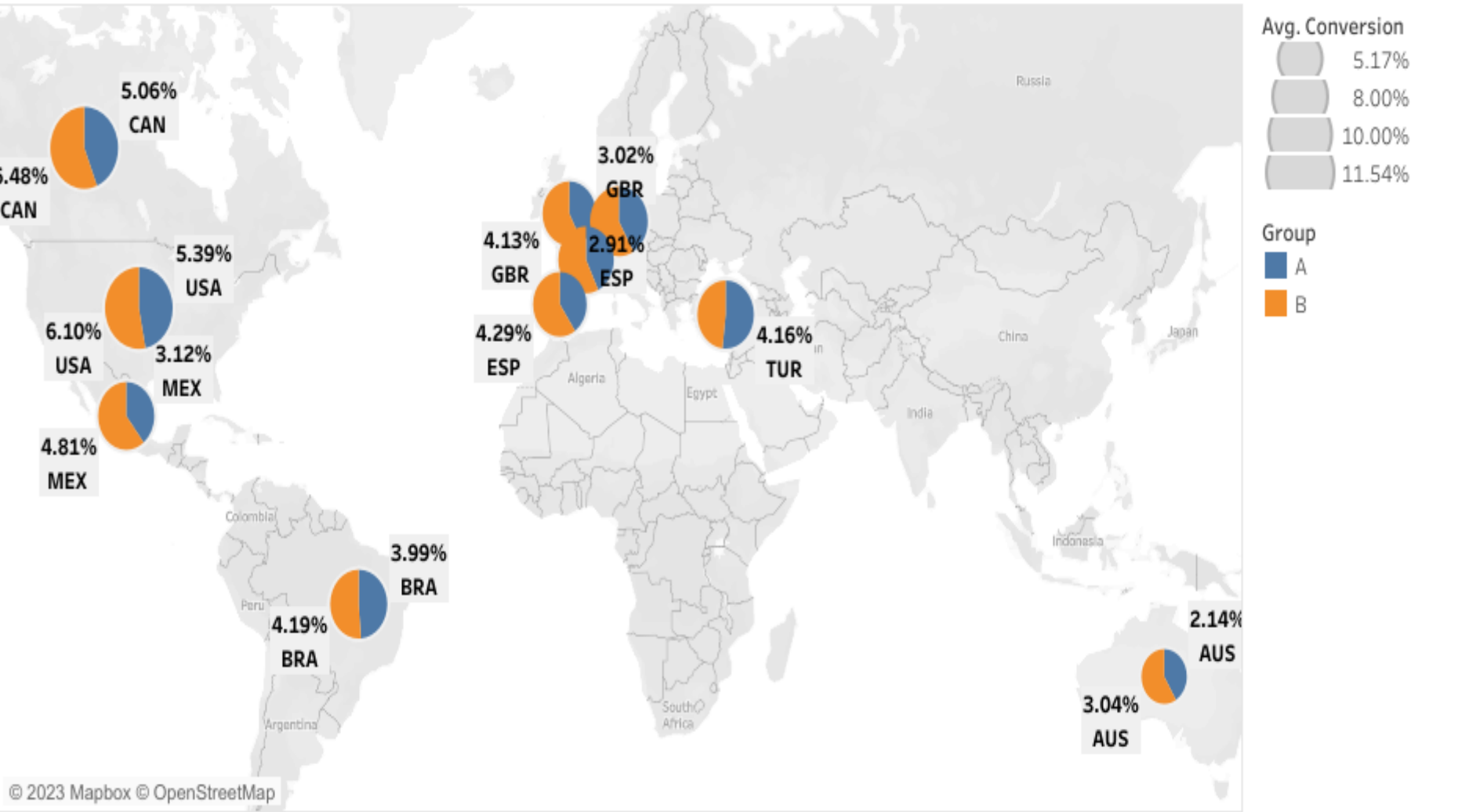
- Sample B had a better conversion rate across all countries
- This implies that the users' chioces were not influenced by their countries of residence

Average Amount by Spent Per Country.

Group	Country	Avg. Total Spent
A	USA	$4.28(7,330)
	TUR	$3.68(1,852)
	CAN	$3.59(770)
	DEU	$3.39(1,912)
	Null	$3.23(299)
	BRA	$3.21(4,818)
	MEX	$2.81(2,820)
	FRA	$2.67(1,539)
	ESP	$2.18(997)
	GBR	$2.11(1,457)
	AUS	$1.67(608)
B	GBR	$4.48(1,501)
	CAN	$4.20(803)
	USA	$4.04(7,491)
	Null	$3.53(348)
	MEX	$3.33(2,934)
	ESP	$3.21(1,003)
	BRA	$3.06(4,635)
	DEU	$2.69(1,958)
	TUR	$2.48(1,889)
	FRA	$2.26(1,558)
	AUS	$2.08(560)

Group
A
B

- Sample B spent more than A across all countries

- This implies that the users' chioces werenot influenced by their countries of residence

The outcome revealed a sufficiently strong evidence to conclude that:

- there exists a significant difference between the conversion rate for the two groups with 0.01% probability that this finding was due to chance.

- no significant difference exists between the average amount spent by each group with 94.4% probability that this finding was due to chance.

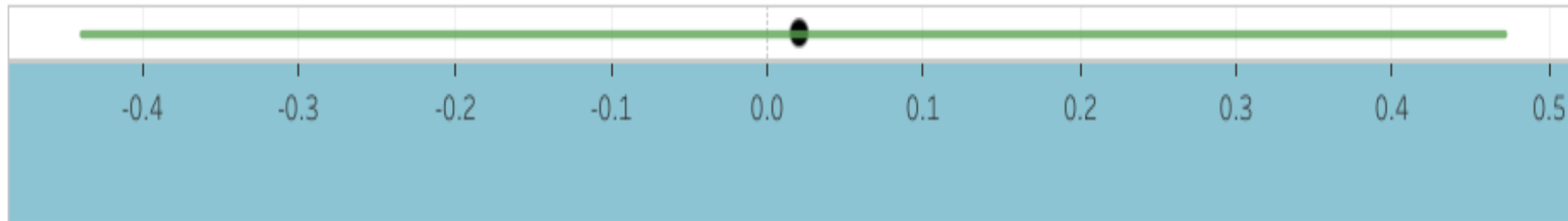- there is a 5% probability of error in both findings.

Novelty Effect
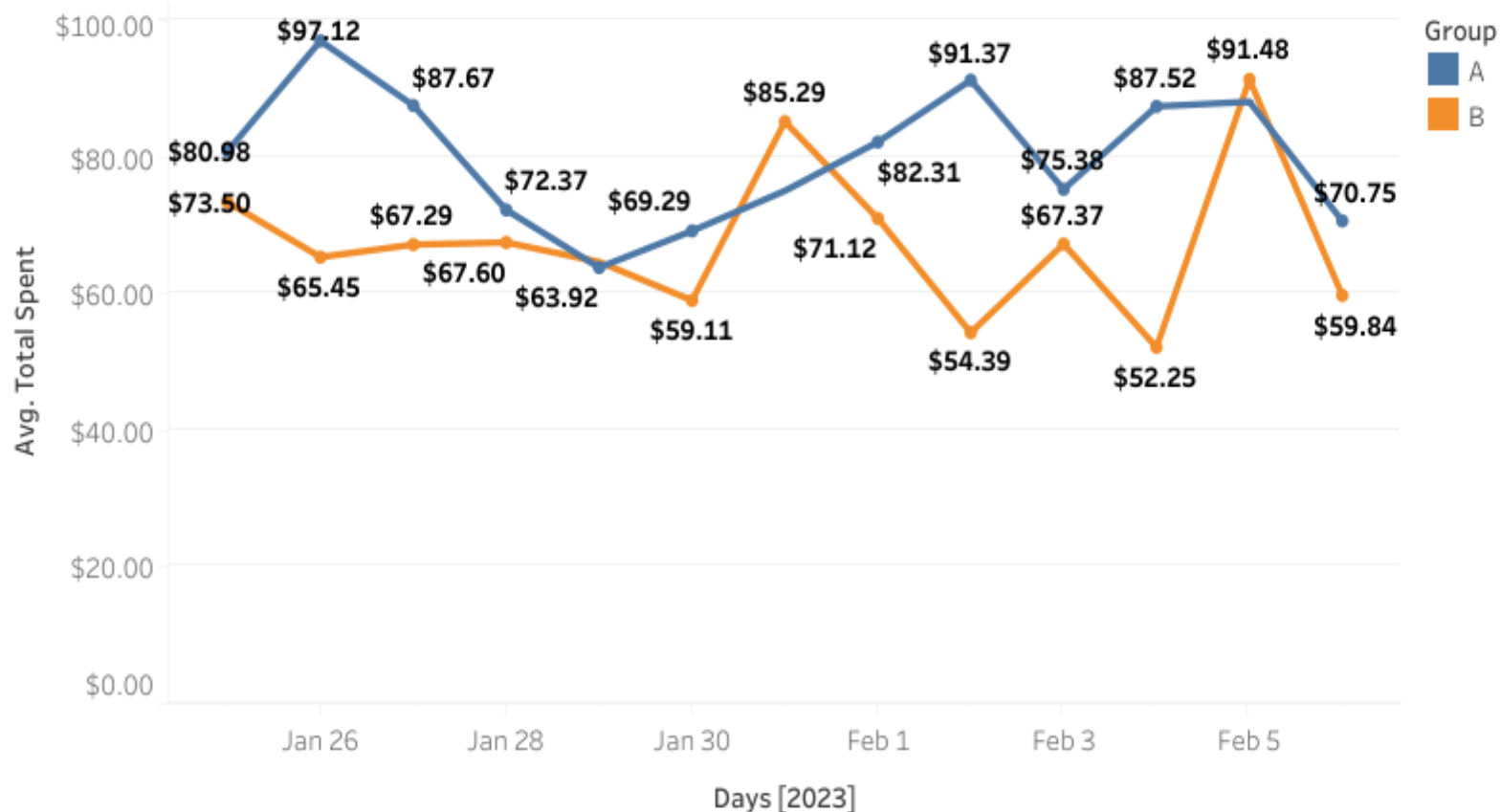
- The impact of the banner declined gradually with time with few occasional spikes in.
- This implies that the impact of the banner waned with time.

95% Confidence Interval for Difference in Average Amount Spent between A & B

- The chart above indicates that 0 is included in the range of 95% CI values

- This implies that, in 95 of 100 instances of conducting this experiment, there is a chance of have an instance in which there will be no difference between the average amounts spent by each group.

Sample Size Effect

Metrics	Expected Minimum Size	Used Size	Expected Minimum Change	Observed Minimum Change
Conversion Rate	60.6k	48.9k	3.9%	0.7%
Average Amount Spent	186k	48.9k	33.7%	2%

- The sample size was insufficient to yield our expected minimum change.

- This implies that we need to extend the time to capture more users to meet the expected minimum sizes.

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- The sample size was insufficient to yield our expected minimum change.

- This implies that we need to extend the time to capture more users to meet the expected minimum sizes.

The following recommendations are suggested:

- Do not lunch the banner for now

- Repeat the experiment for more days to generate more sample size

- Look out for novelty effects.

- Look out for 0 in the 95% CI values.