

The final test task is simple:

Dilan wants to spend more time and more money on his business. He wants to focus on one country first.

1. In which country should he prioritise his effort and why?

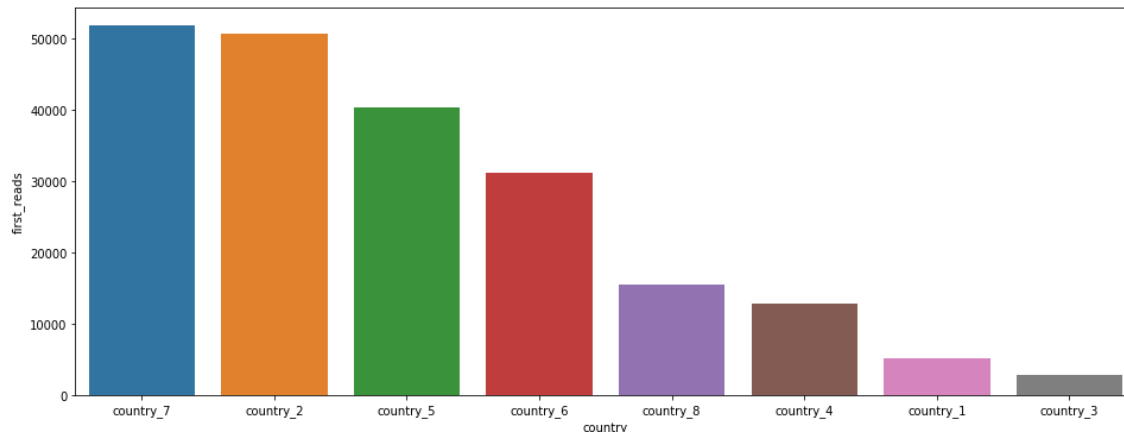
2. Any other advice to Dilan on how to be smart with his investments based on the data from the last 3 months?

3. Can you see any more interesting information (beyond the above 2 questions) in the data from which Dilan could profit?
Answer these questions and create a PowerPoint or Keynote presentation in which you introduce your solution.

1. Which countries should you focus your advertisting spend on?

Looking at the number of unique readers (first reads) by country (**fig 1**), we can see that
The largest numbers are coming from country 7 and country 2, closely followed
By country 5...

Fig1: new users by country



1. Which countries should you focus your advertisting spend on?

However, when we look at how users from different countries churn (fig 2), we can see that the users we get from country 4 the most likely to return to the site and read more articles, as well as to subscribe and purchase content. More than 80% of readers from country 4 returned to the site and read more articles, as well as to subscribe and purchase content. Users from Country 4 also produce the highest revenue per user (fig 4).

I would therefore suggest you focus your advertising spend on users from countries 4 and 5, as this would give you the most “bang-for-buck”. If I had to pick one, I’d go for country 4, as it has the best user retention on average, and is doing less well than country 5 in terms of initial lead discovery.

Take-home action:
Focus more on country 4

Fig3: user retention by country (% values)

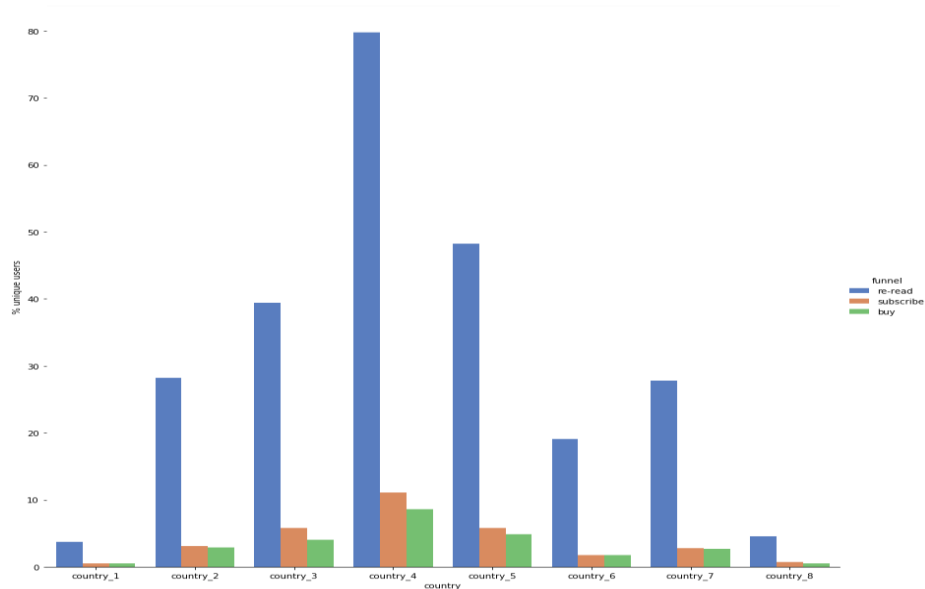


Fig2: user retention by country (absolute values)

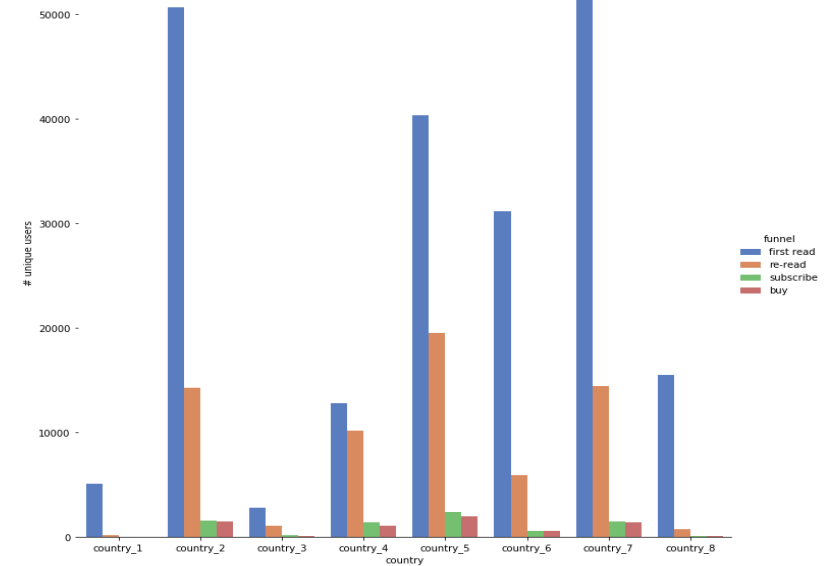
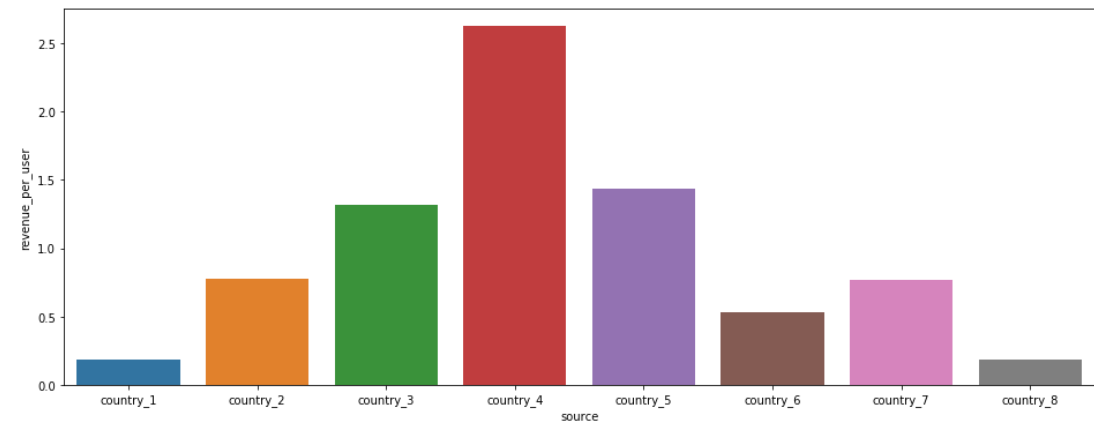


Fig4: revenue per user by country



2. Other advice part 1: lead sources

You are currently spending all of your advertising budget on Google Adwords.

However it isn't the main source of your traffic. You're actually getting ~50% more traffic organically via Reddit, and also Adwords isn't dramatically outperforming your SEO reach (**fig 5**). Adwords also produces The lowest revenue per user (**fig 6**).

Not only that, Adwords isn't doing as good a job of on-boarding the leads it generates.

Looking at your on-boarding funnel segmented by traffic source, organic SEO traffic does the best at this, followed by Reddit. Around 60% of those who find their first article via organic search (SEO) come back for more, whereas less than 20% of arriving via AdWords do (**fig 7**).

Fig5: user segmentation by source

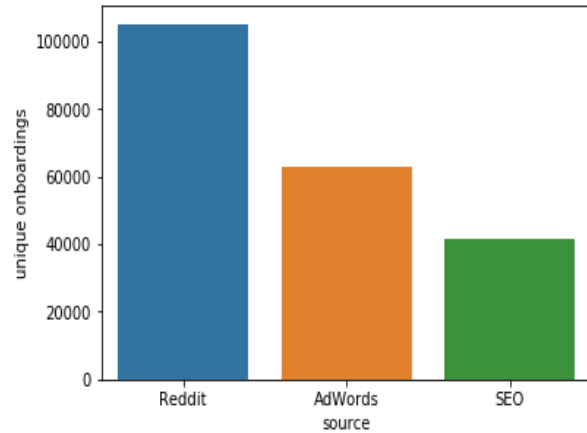


Fig6: revenue per user by lead source

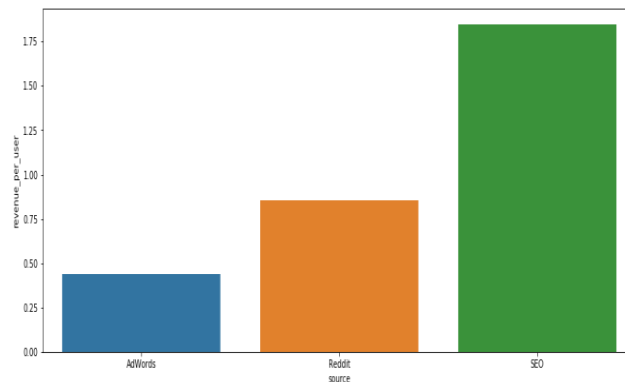
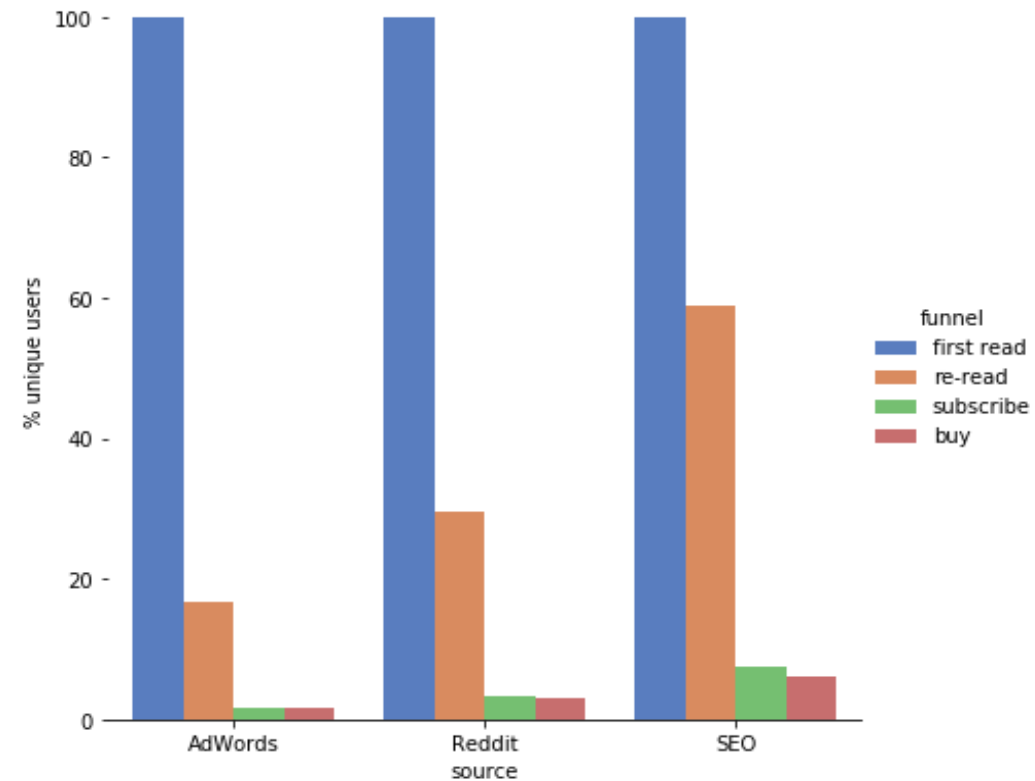


Fig7: user onboarding funnel by source



2. Other advice on ad spend: lead sources

There are a number of possible strategies to improve your advertising spend based on this information:

1. One option is to try to optimise your AdWords campaign a bit. It may be that you are targeting the wrong audience, or using the wrong keywords. If you refocused your target audience to focus on users from country 4 (see **fig 2**) you would get a better conversion rate. Keyword optimisation could also help show users more relevant content. Users from natural SEO traffic are typically landing on posts about North America, followed by post about South America, and articles about Asia and North America are most popular overall (**fig 9**), but your AdWords users are landing on posts about Asia and Europe (**fig 8**). If you're using these latter as keywords or promoting articles on these regions, it might be preferable to switch to a pattern that more closely matches the organic traffic or total topic popularity. I'd suggest refocusing from Europe to North America as a first attempt.
2. Another option is to embrace the fact that Reddit is a promising source of visitors for your blog (**fig 5**). Although not quite as efficient in terms of conversion as organic search engine traffic (**fig 7**), it is better than Adwords in that respect. Interestingly, more Reddit users read a first article about Asia than about all the other regions put together (**fig8**). It might make sense to start advertising on Reddit, focusing particularly on subreddits about Asia or travelling in Asia.

Take-home actions:

(1) review AdWords targeting, (2) consider Reddit ads!

Fig8: number of first articles read by topic, split according to lead source.

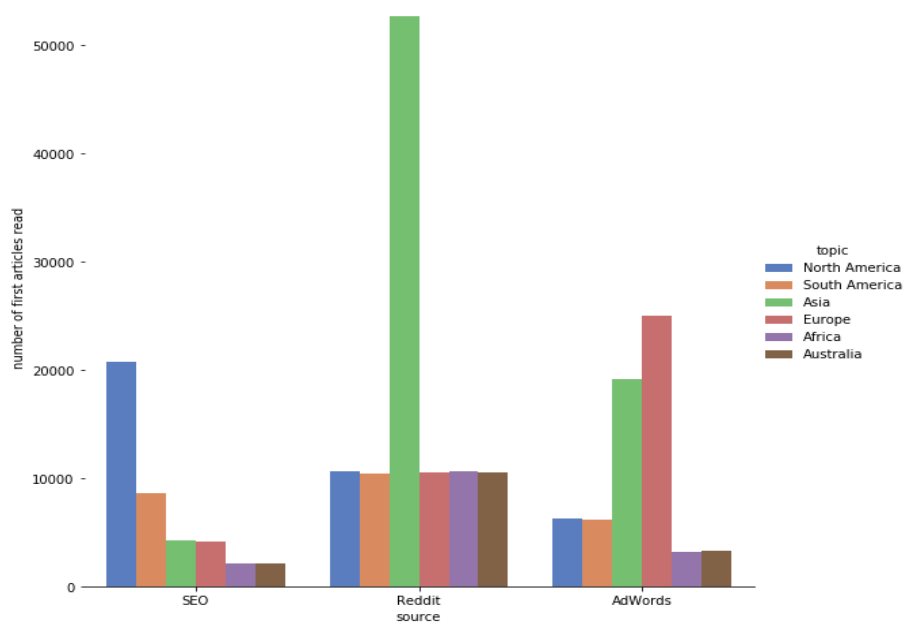
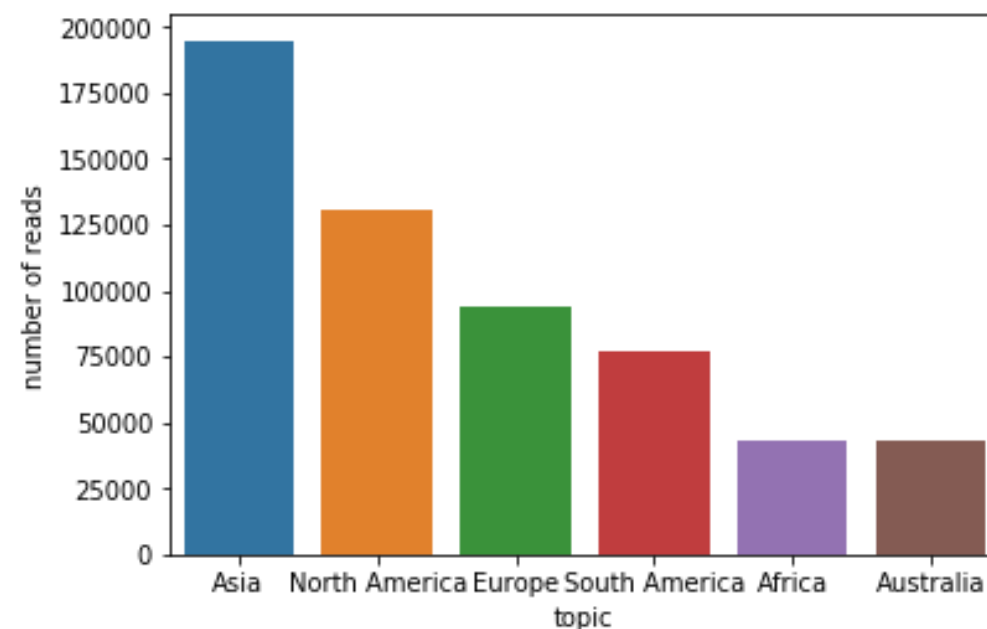


Fig9: total articles read by topic



Focusing on Country 4: ad spend options

If you choose country 4, how should you target your ads?

Fig 10 shows the reading interests of users from country 4. As we can see, they are primarily interested in articles about Asia, though they also care somewhat about North America and Europe.

I would choose to focus my advertising on pointing them to articles about Asia, as these will be the most engaging for this user segment.

Fig 11 shows that the current main source of users from country 4 is Reddit.

And if we combine the two segmentations, we can see that by some margin, the single biggest sub-segment of country 4 users is the group that arrives by Reddit and reads about Asia (**Fig 12**).

Take-home actions:

If you’re targeting country 4, focus on Reddit ads about Asia!

Fig10: Country 4 topic preferences

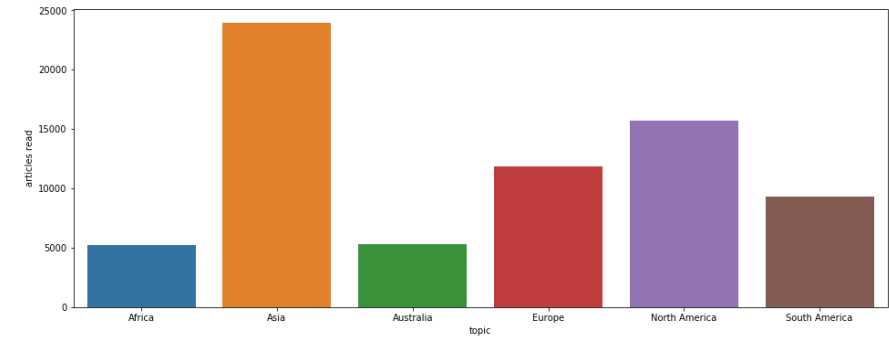


Fig11: Country 4 lead sources

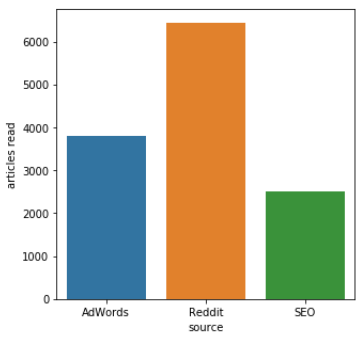
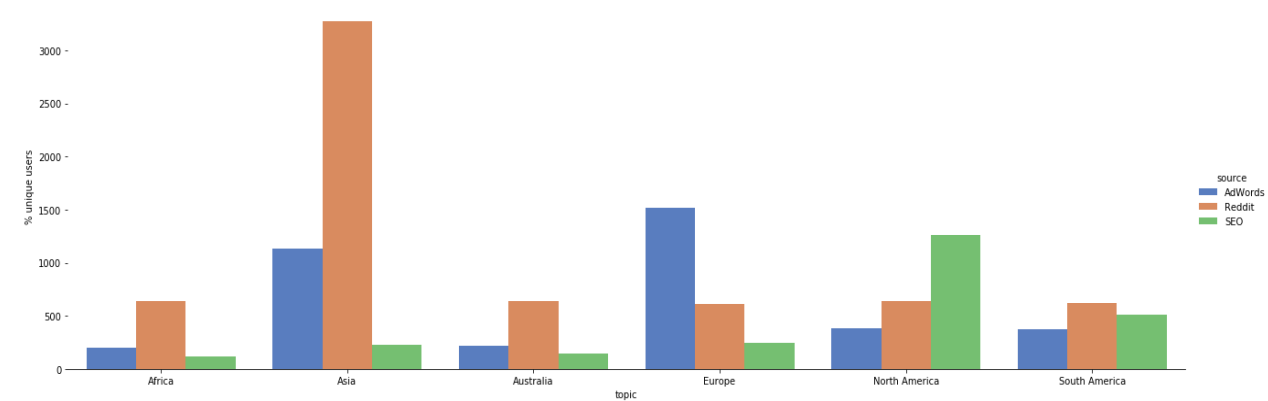


Fig12: Country 4 segmentation by topic preference and lead source



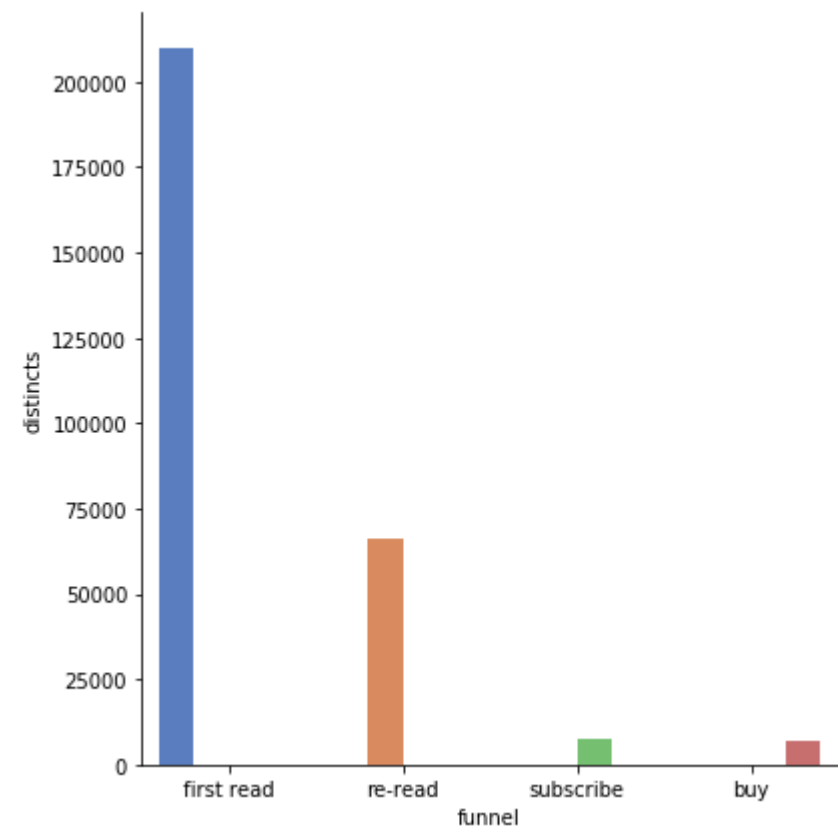
Currently, the area where you have most scope for improvement is user retention.

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Figure 13 shows the journey for all of your users through the site. It shows us that around 35% of users who read a first article stay to read another, and of those less than 10% become subscribers. Once subscribed, the news is a bit better: most of those who subscribe go on to purchase at least one piece of paid content.

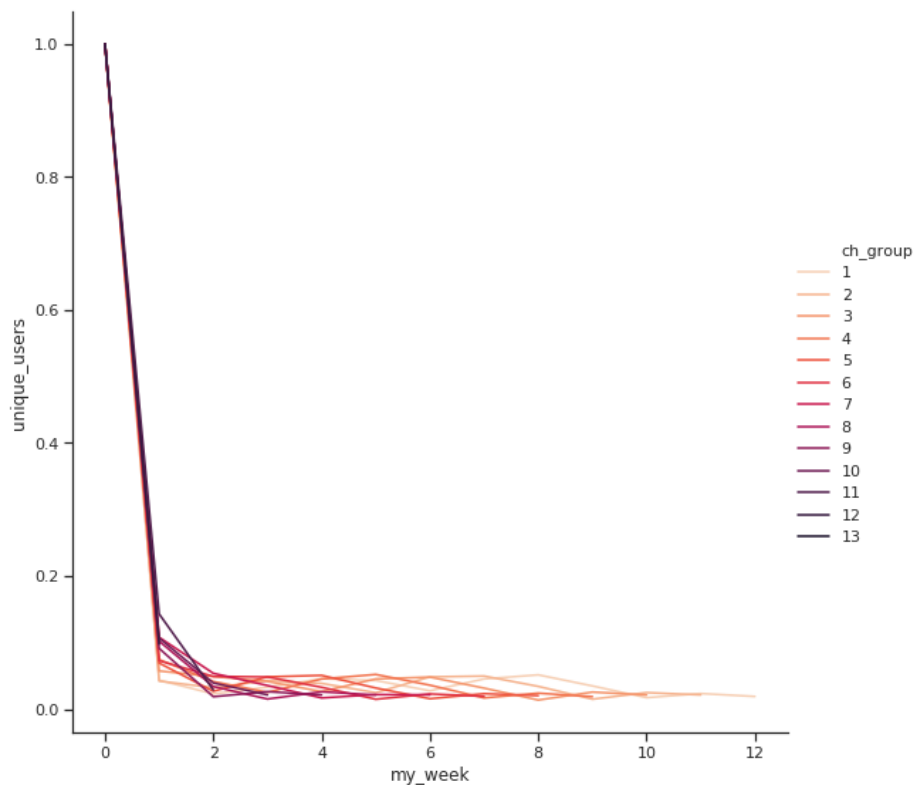
A bar chart illustrating the number of distinct users at each stage of a funnel. The y-axis is labeled 'distincts' and ranges from 0 to 200,000 in increments of 25,000. The x-axis is labeled 'funnel' and has four categories: 'first read', 're-read', 'subscribe', and 'buy'. The bars are colored blue, orange, green, and red respectively. The 'first read' bar is the tallest, exceeding 200,000. The 're-read' bar is significantly shorter, around 65,000. The 'subscribe' and 'buy' bars are much shorter, around 10,000 and 8,000 respectively.

funnel	distincts
first read	210000
re-read	65000
subscribe	10000
buy	8000



The graph displays the number of unique users over a 12-week period for 13 different categories (ch_group). The y-axis, labeled 'unique_users', ranges from 0.0 to 1.0. The x-axis, labeled 'my week', ranges from 0 to 12. All categories start at a value of 1.0 at week 0. By week 1, all categories have dropped significantly, with most falling below 0.2. From week 2 onwards, the values for all categories remain very low, generally below 0.1, with some minor fluctuations. The legend on the right indicates that groups 1 through 10 are represented by various shades of orange, while groups 11 through 13 are represented by various shades of purple.

my week	ch_group 1	ch_group 2	ch_group 3	ch_group 4	ch_group 5	ch_group 6	ch_group 7	ch_group 8	ch_group 9	ch_group 10	ch_group 11	ch_group 12	ch_group 13
0	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
1	0.05	0.08	0.10	0.12	0.15	0.18	0.20	0.22	0.25	0.28	0.30	0.32	0.35
2	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14
3	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13
4	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13
5	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13
6	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13
7	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13
8	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13
9	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13
10	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13
11	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13
12	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.10	0.11	0.12	0.13

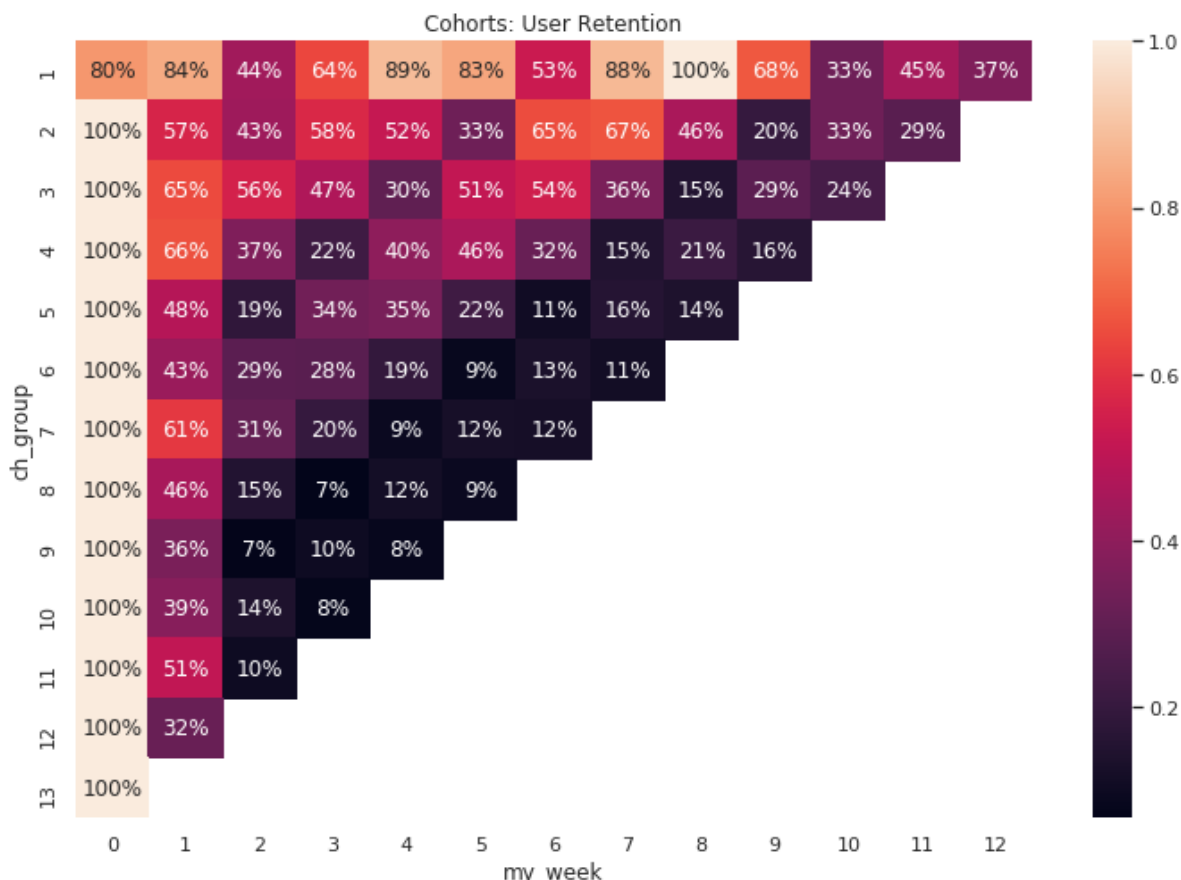


3. Additional advice (1): user retention

If we ignore the first article each user reads, and focus only on those who come back for another article, we can see a bit more difference between cohorts (fig 15).

Unfortunately the picture is that user retention appears to be getting worse, rather than better. Nearly 40% of readers from your first cohort are still coming back to read in week 12, and in the first four cohorts, over 50% were coming back in the first week after signing up. By week 8 this is hovering around 10%.

Fig 15: percentage of users returning to read another article in each week, split into Cohorts according to the week they signed up.

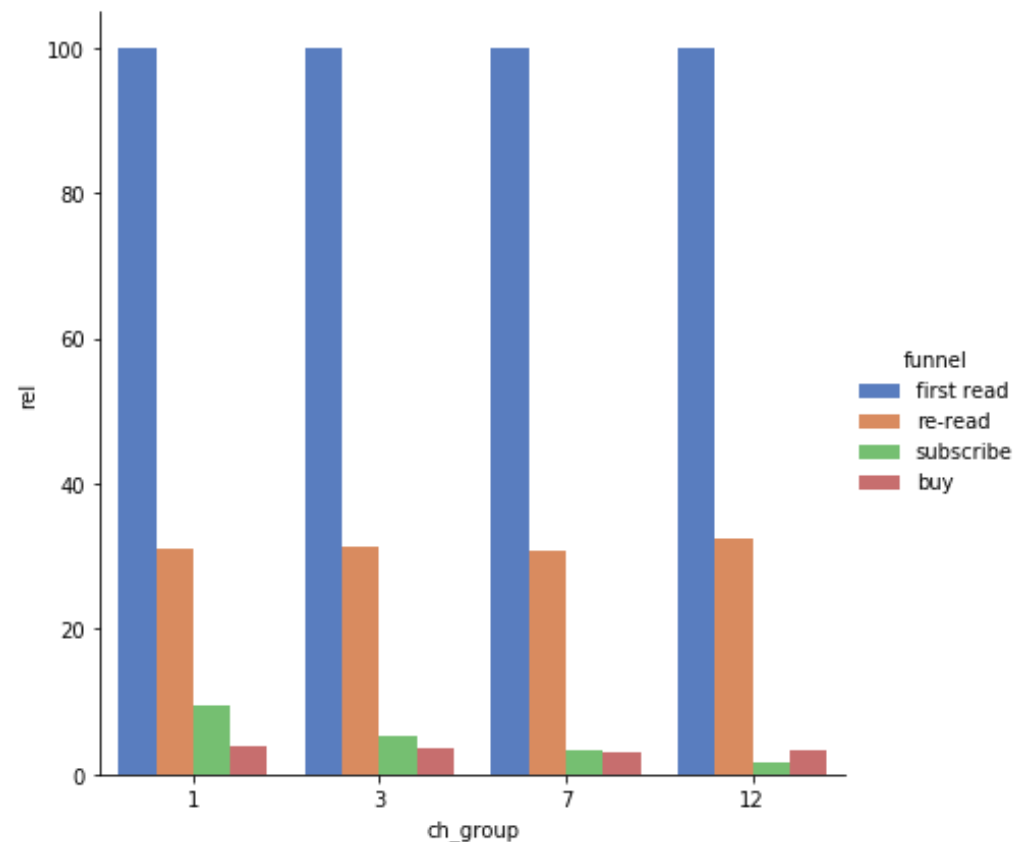


This is further confirmed by looking at the funnel analysis segmented by cohort (fig 16). Although roughly the same proportion of users are returning to read a second article in each cohort, the proportion of users subscribing or making purchases has decreased in more recent cohorts.

Take-home actions:

(1) Review user experience and onboarding process to improve conversions from repeat reader to subscriber.

Fig 16: user onboarding funnel by cohort



3. Additional advice (2): Something might be wrong with site or data logging!

The data you sent me contains logs up to and including Mar 31, 2018. However on the last day the only data are from repeat-readers. There is a massive drop in daily active users (fig 17). New readers, subscribers and purchases all drop to zero (fig 18), with the final entries from these log categories occurring immediately before midnight on the 30th. However, repeat readers continue to appear in the log until the morning of the 31st (fig 19).

I don't know quite how your data logging is set up, and it may be that this is an artefact of how the logs are dumped to your server. But assuming all events are logged the same way, this points to a potential issue on your site. Is it possible that something is wrong on the landing page for your site?

Take-home action:

Check website and data logging to ensure everything is working correctly.

Fig 17: daily active users by day

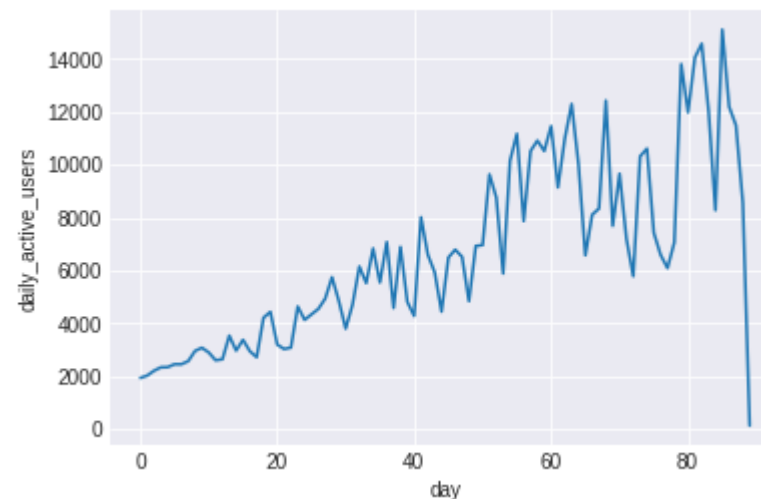


Fig 18: event rasters for different event types in final hours of data log

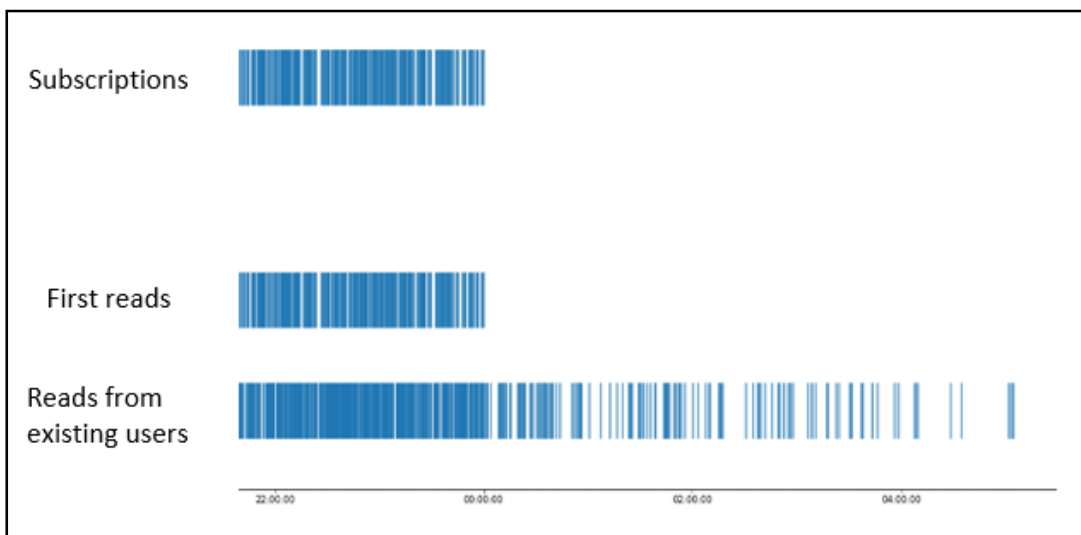
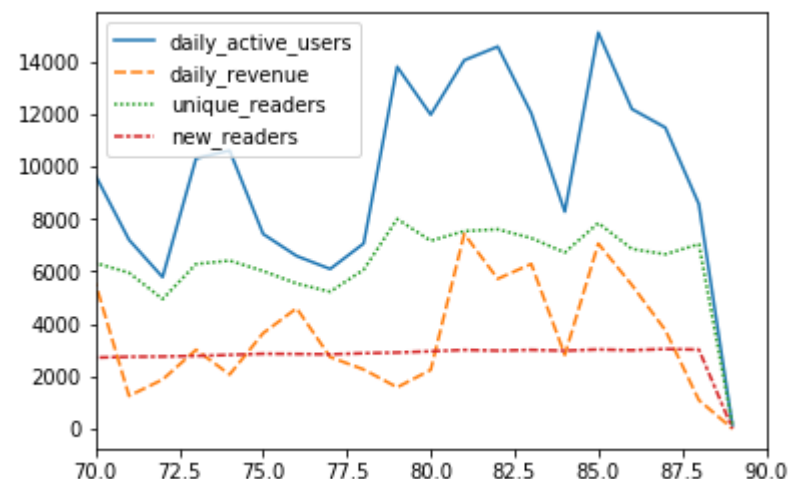


Fig 19: site usage metrics by day (final 20 days)



Conclusions

Which country to target?

Looking at your users segmented by country, it appears that countries 4 and 5 have the best retention prospects.

If I had to pick one to focus ad spend on, I would focus on **country 4**, as currently it has the least number of initial impressions.

The best way to achieve this would be to focus on constructing Ads about **Asia**, and advertising on **Reddit**, in sub-reddits about travelling or Asia.

What else does the data tell us about where to spend money?

Adwords might not be the best place to spend your money, as users arriving from AdWords seem to churn more than users from other sources, and it produces a lower Revenue per user than other sources.

Reddit gives higher revenue per user, and is already a good source of traffic for you. It might be wise to switch some ad spend from Adwords to Reddit.

Alternatively it may be that more careful targeting with AdWords would improve performance.

To pursue users from country 4, it would be best to target reddit users with ads focused on the Asia topic.

Additional points from the data

Cohort analysis shows us that user retention is deteriorating in relative terms.

A particular bottleneck seems to be that of converting re-readers to subscribers. A review of consumer experience and especially the onboarding process could help fix this. Consider targeting re-readers with encouragements to subscribe, as subscriptions tend to lead to revenue.

A potential issue:

Last user event log is in the morning of the 31st March, but most log event types stop at midnight on the 30th. Check site functionality and data logging to ensure that there isn't a problem here!