

Analysis of users preference for old and new landing page of E-News Express

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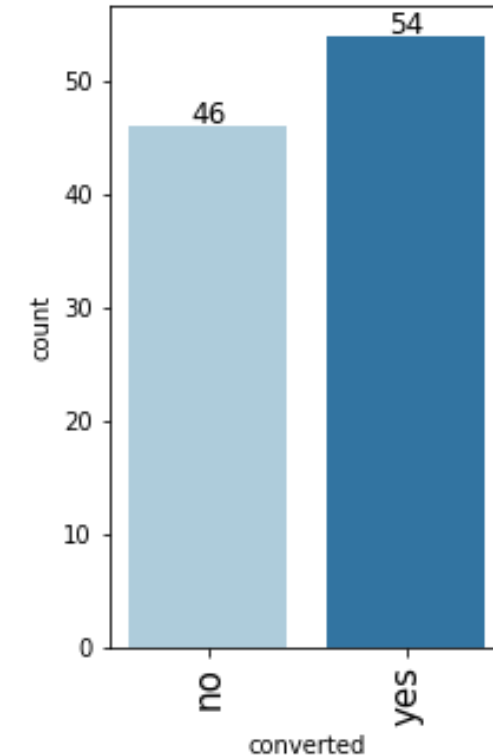
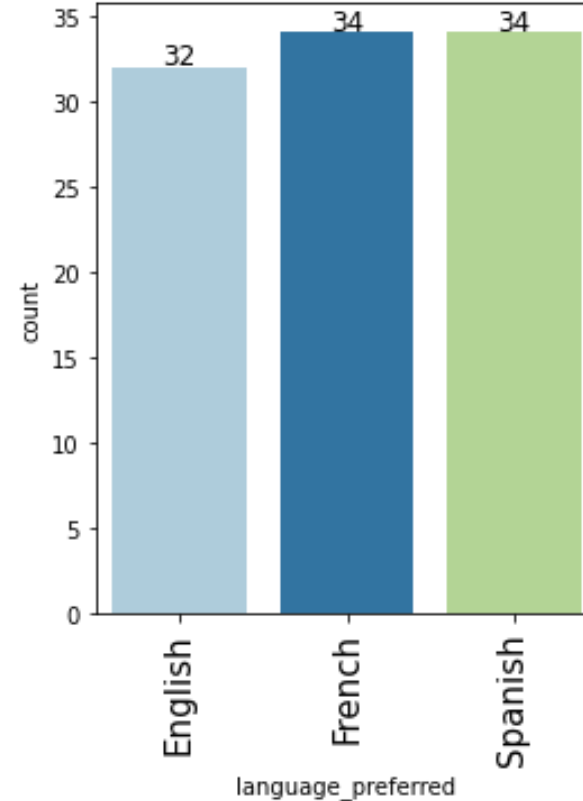
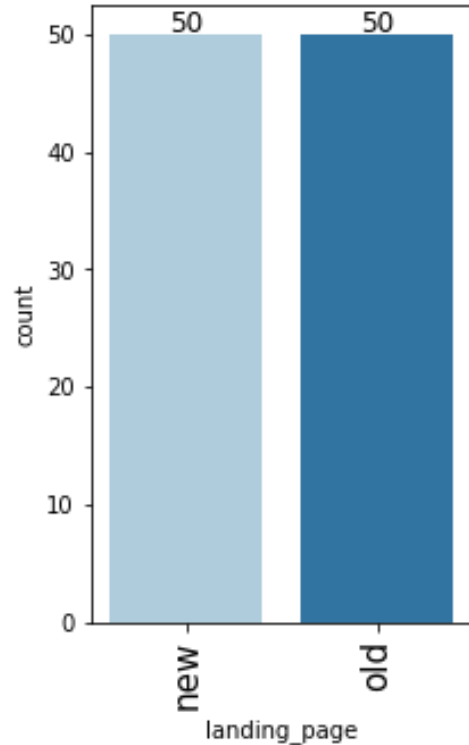
Overview

- This data was collected by E-news Express for its old and new online landing page
- Visitors to the website take certain actions based on their interest
- The company analyzed users responses based on two variants to determine which is more effective
- The company plans to analyze these interests to determine whether the new landing page is more effective and attract more subscribers than the old one
- The statistical significance of the variations in the user preferences will be used to determine the effectiveness of the new landing page as against the old landing page

Data-dictionary

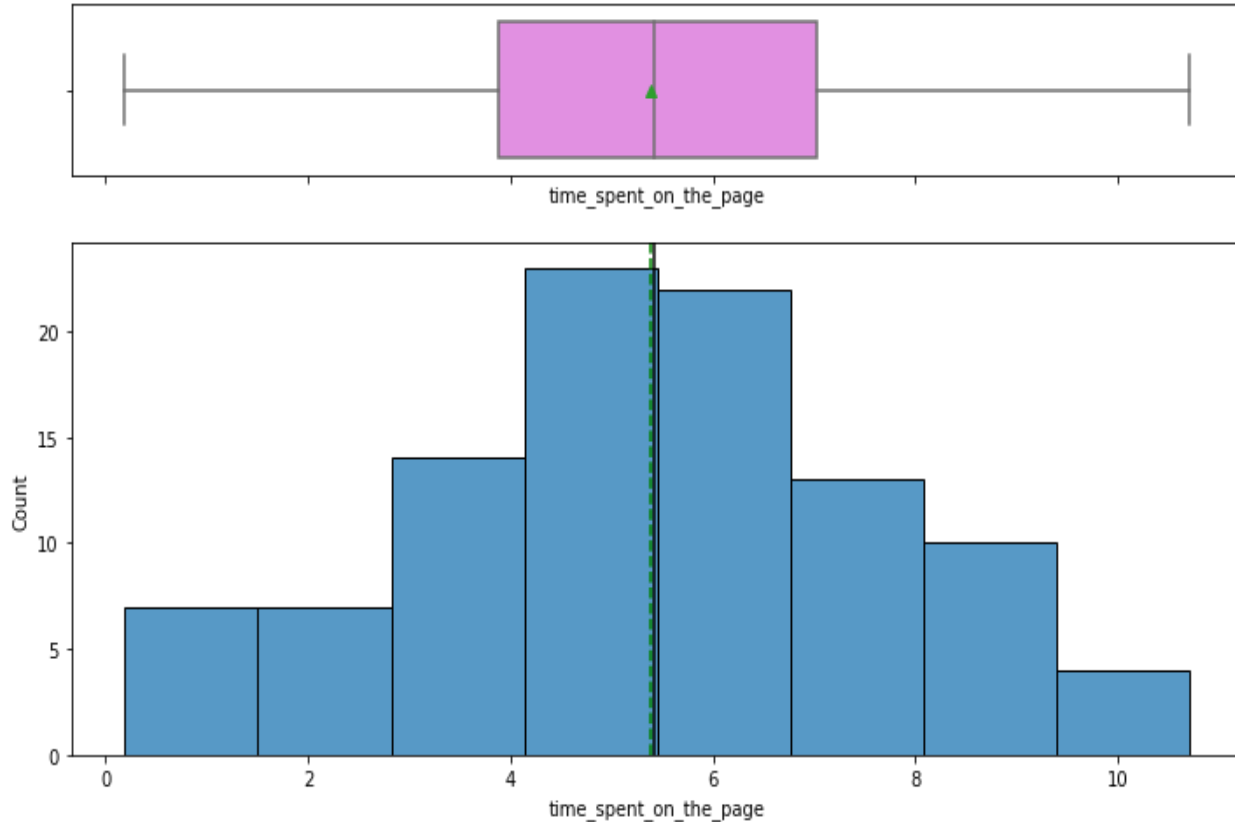
- **user_id** - This represents the user ID of the person visiting the website.
- **group** - This represents whether the user belongs to the first group (control) or the second group (treatment).
- **landing_page** - This represents whether the landing page is new or old.
- **time_spent_on_the_page** - This represents the time (in minutes) spent by the user on the landing page.
- **converted** - This represents whether the user gets converted to a subscriber of the news portal or not.
- **language_preferred** - This represents the language chosen by the user to view the landing page.

Overview of data



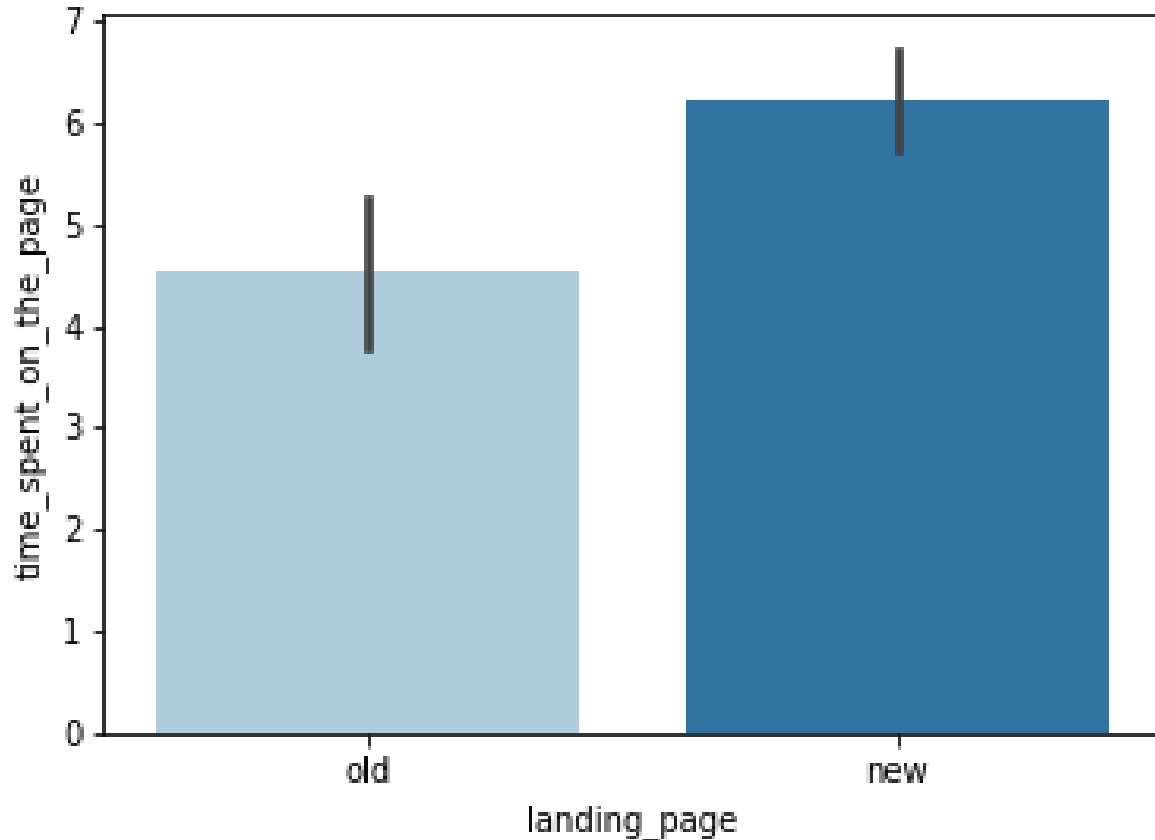
- 50 people visited each landing page (old and new)
- Of the 100 users of the landing pages 32 used English, 34 French, and 34 Spanish
- In all 54 users of the pages got converted to subscriber of the news portal

Time spent on the pages



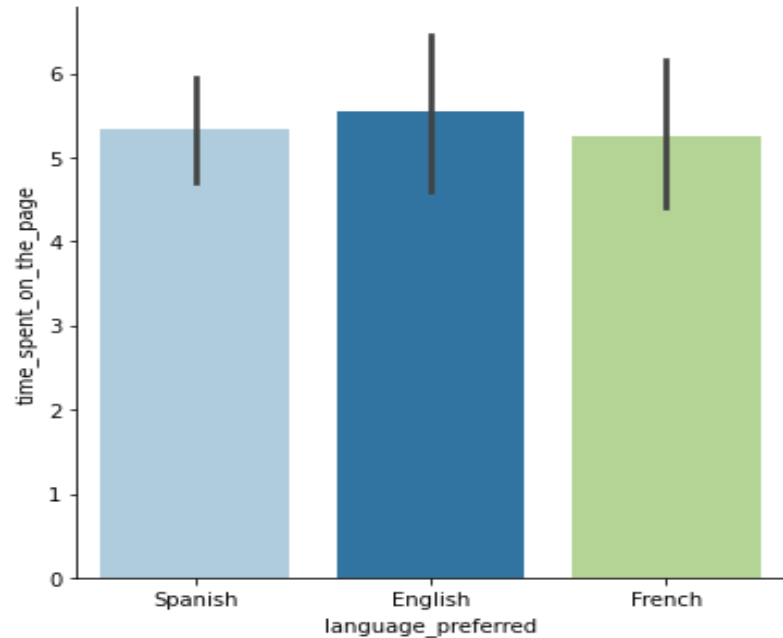
- The distribution of the time spent on the landing page follows a normal distribution.
- No outliers
- The mean and the median are almost the same, 5.38 and 5.42 minutes respectively
- The minimum and maximum time spent on the pages are 0.19 and 10.71 minutes respectively
- The standard deviation of the distribution of the time spent on the pages is 2.73 minutes

Time spent on the new page vs the old page

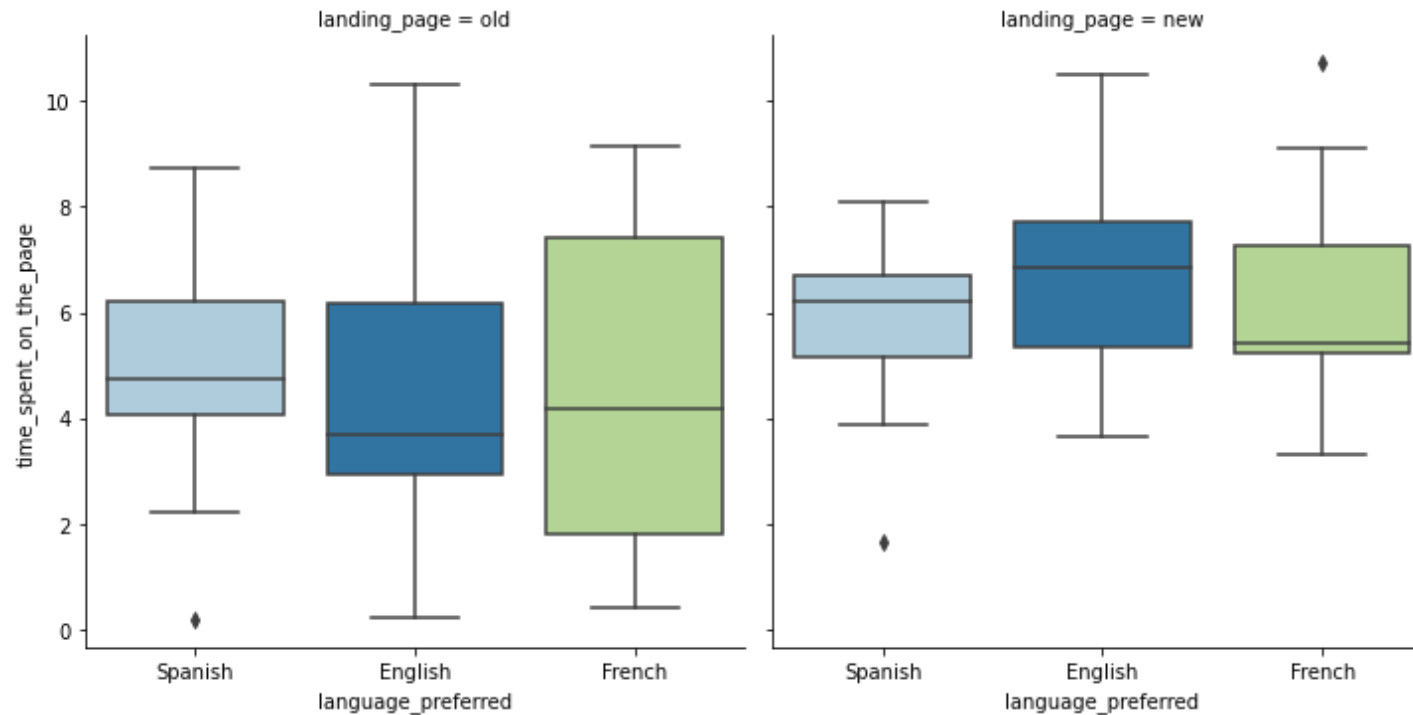


- Visitors spent on the average 6.22 minutes on the new landing page as against 4.53 minutes on the old landing page
- This means on the averages visitors stay 1 minutes 41 second longer on the new page than on the old page

Time spent on the pages by different language users

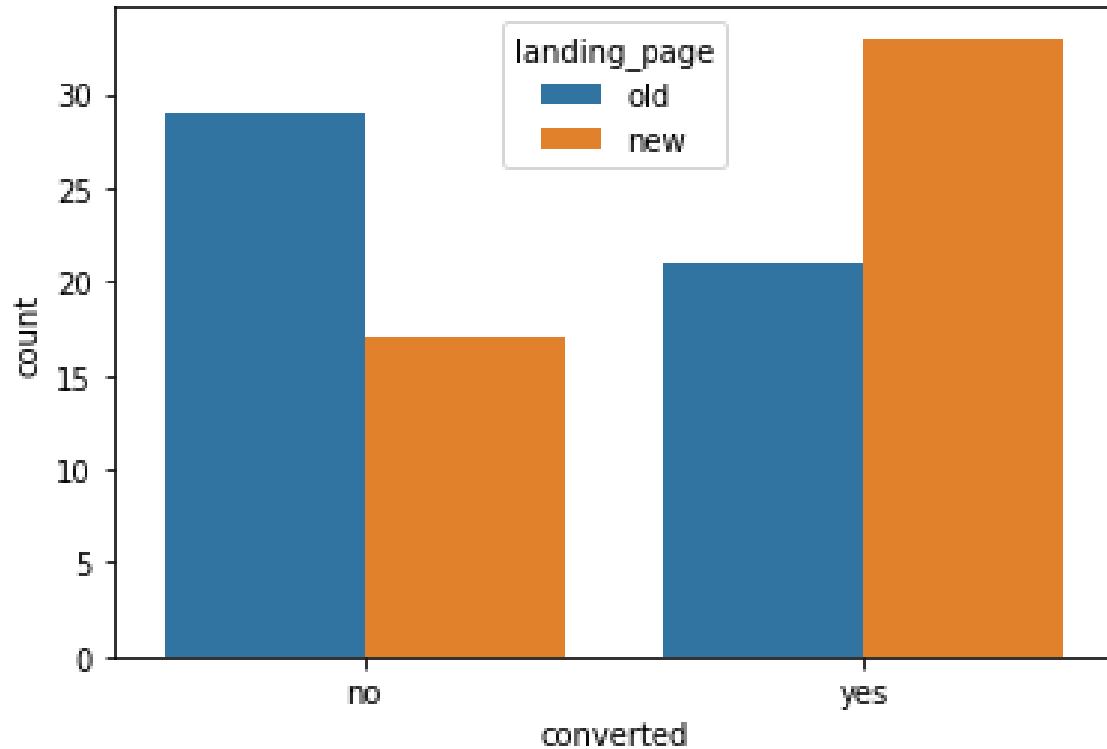


- All the three language users spent on the average, between 5 and 6 minutes on the landing pages
- No significant difference in the time spent on the pages by different language users



- The average time spent by each language user is higher for the new page than for the old page
- The lowest mean for the three languages (French) for the new landing page is higher than the highest (Spanish) for the old landing page
- All the three preferred language users, spend on the average a little over a minute more on the new page than the old
- This further buttresses the point, there is a difference in mean time spent on the pages, but no significant difference in time spent among different language users on the same page

Conversion rate of users on the pages



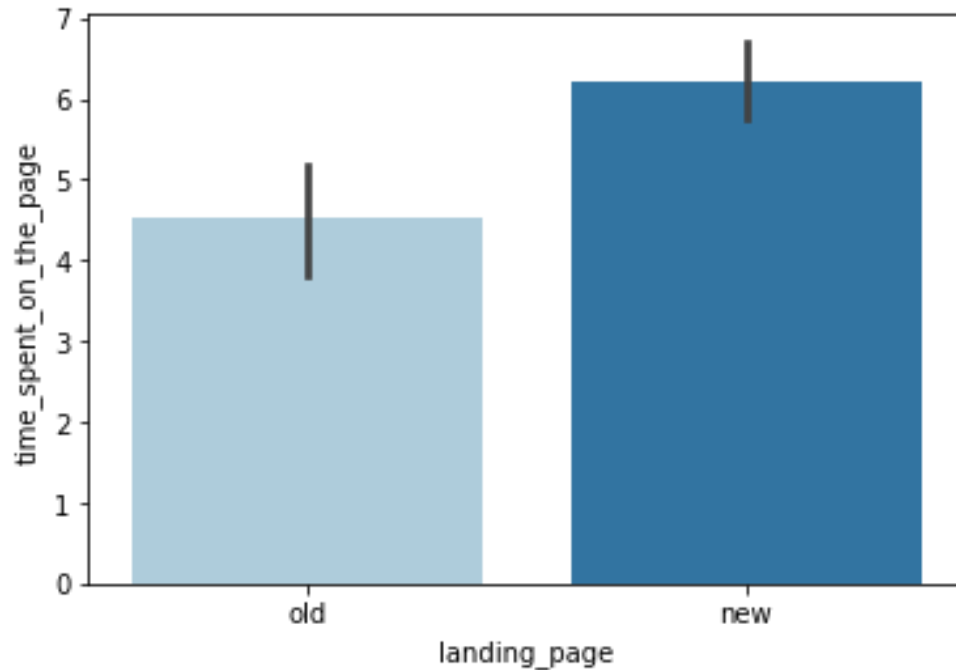
- 26 of the 50 (66%) users in the new page converted
- 21 of the 50 (42) users in the old page converted
- Conversion rate for new page 1.5 times higher than that of old page

Statistical analysis and answers to key questions

Assumption:

Significance level = 0.05 for all analyses

Do the users spend more time on the new landing page than the old landing page?

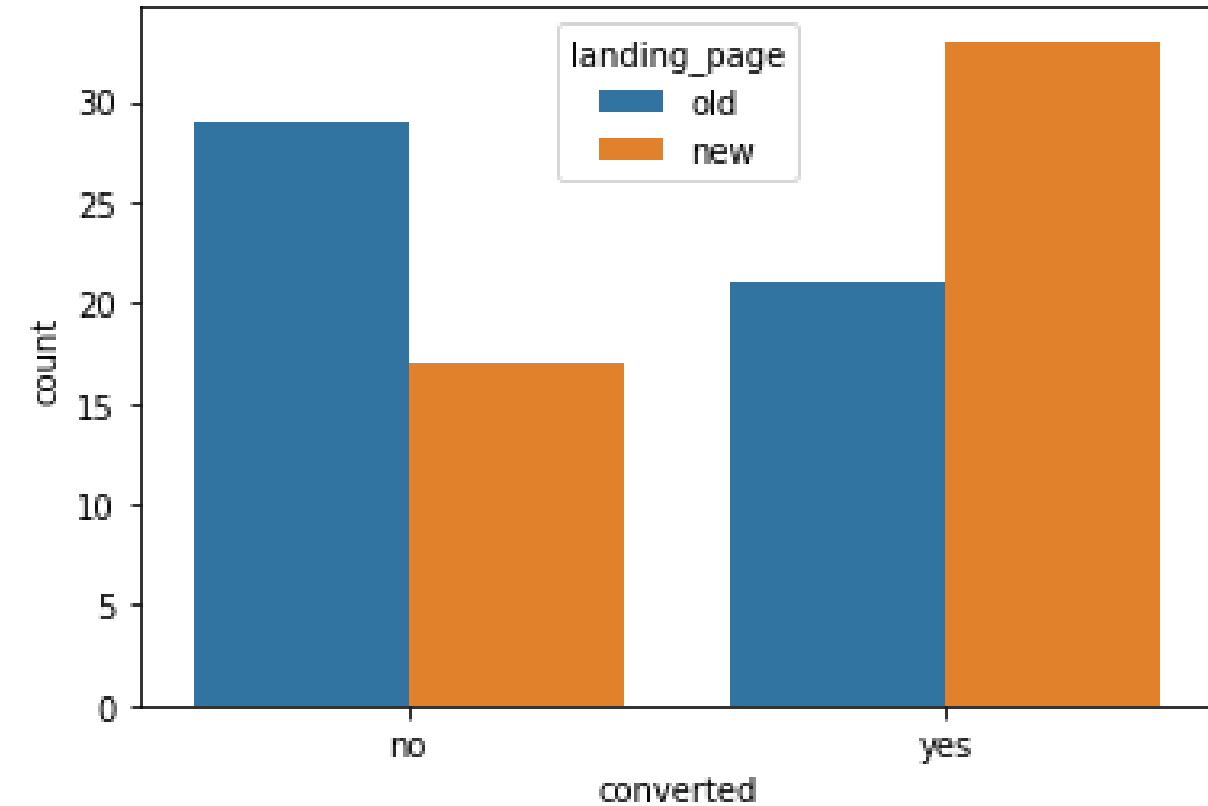


Conclusion:

Users spend more time on the new landing page than the on old landing page

- ***Null and alternative hypotheses***
- H_0 : time spent by users in the new landing page is equal to time spend by users in the old landing page
- H_a : time spent by users in the new landing page is greater than time spend by users in the old landing page.
- ttest-ind returned a p-value of 0.00013
- Since the p-value is less than 0.05, we reject the null hypothesis (H_0)

Is the conversion rate (the proportion of users who visit the landing page and get converted) for the new page greater than the old



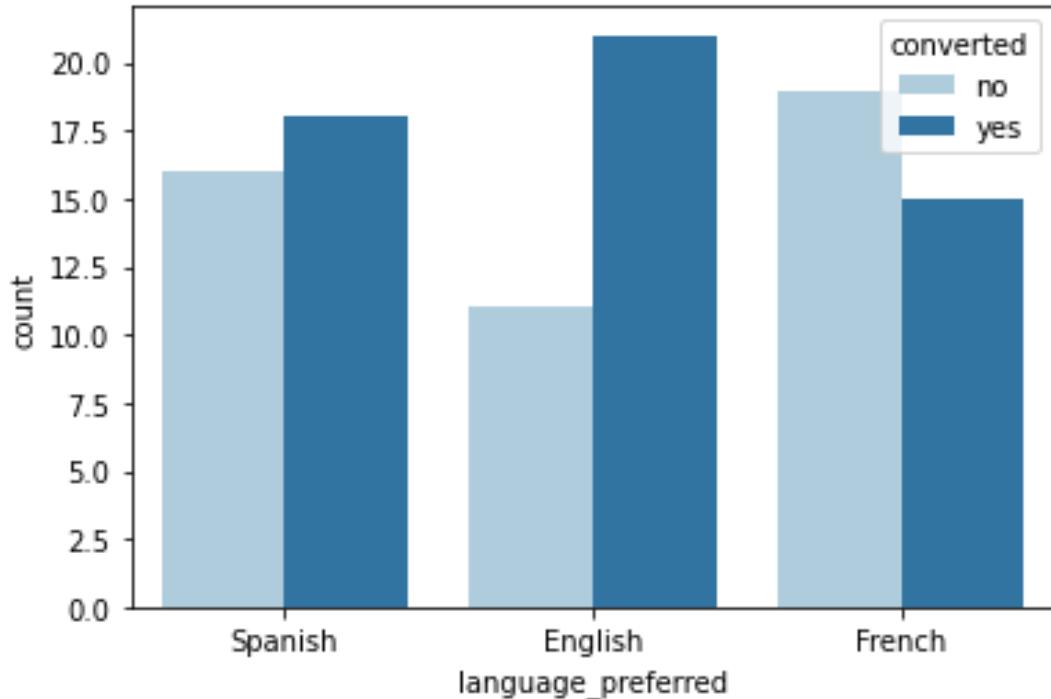
Conclusion:

Conversion rate for new page is greater than old page

- ***Null and alternative hypotheses***

- H_0 : Conversion rate for new page same as old page
- H_a : Conversion rate for new page greater than old page
- proportions- ztest returned a p-value of 0.008
- Since p-value is less than 0.05, we reject the null hypothesis (H_0)

Does the converted status depend on the preferred language?



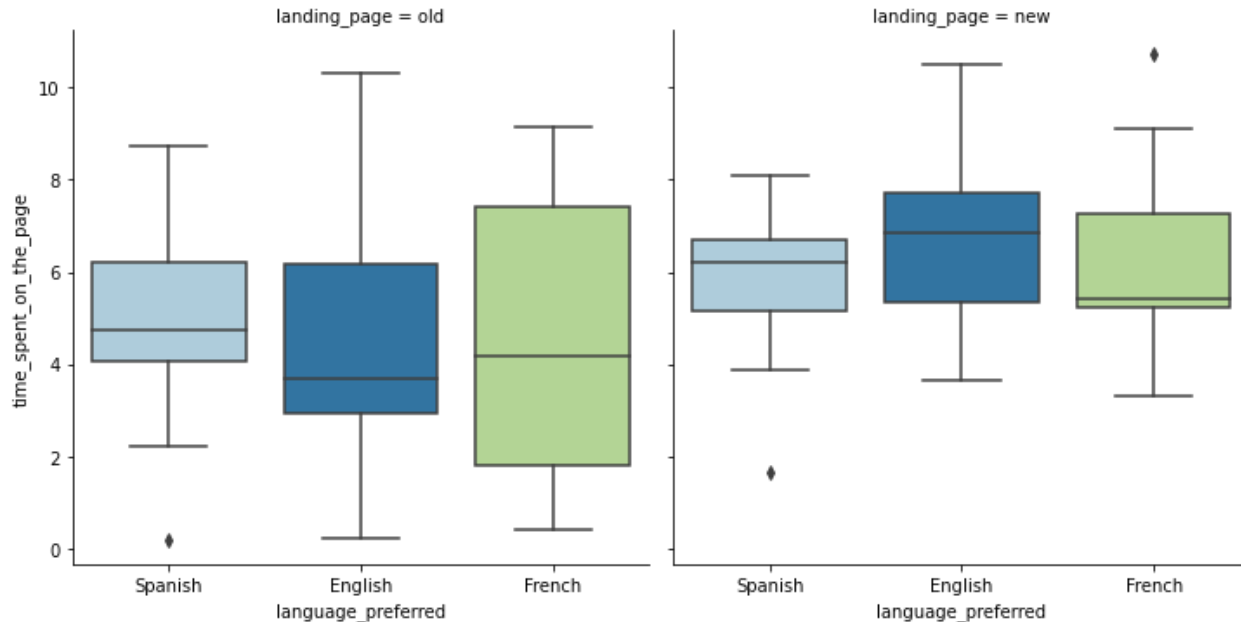
- ***Null and alternative hypotheses***
- H_0 : Converted status is the same for all three languages
- H_a : Converted status not the same for all the three languages
- Chi-contingency returned a p-value of 0.21
- Since p-value is greater than 0.05, we fail to reject the null hypothesis (H_0)

Conclusion:

The converted status does not depend on preferred languages

Is the mean time spent on the new page same for the different language users?

- ***Null and alternative hypotheses***



- H_0 : mean time spent on new page is the same for different language users
- H_a : : mean time spent on new page is the different for different language users
- ANOVA, `f_oneway` returned p-value = 0.95
- p-value > 0.05. The null hypothesis cannot be rejected.

Conclusion:

The mean time spent on the new page is the same for different languages

Conclusions

- Based on the sample data analyzed:
- Users have a higher preference for the new page than the old page
- Users spent more time on the new page than the old page
- Users gets converted to a subscriber of the news portal more than the old portal
- Users preferences for the pages is not related to the language spoken
- Users conversion to a subscriber or otherwise in also no related to language spoken
- There is a positive correlation between time spent on the page and the users attraction or likeness for the page.

Recommendations

- The sample data thus far strongly support the fact that the new landing page is more preferred by users than the old landing page
- I recommend the company switch to the new landing page