

E-news Express Project

Objective

Explore the dataset and extract insights using Exploratory Data Analysis.
Perform statistical analysis of business data to answer the questions:

- Do the users spend more time on the new landing page than the old landing page?
- Is the conversion rate (the proportion of users who visit the landing page and get converted) for the new page greater than the conversion rate for the old page?
- Does the converted status depend on the preferred language?
- Is the mean time spent on the new page same for the different language users?

Note: Significance level of 0.05 is considered for all tests.

Data Information

The data consist of users equally divided into two groups to determine whether a new feature attract users based on a chosen metrics.

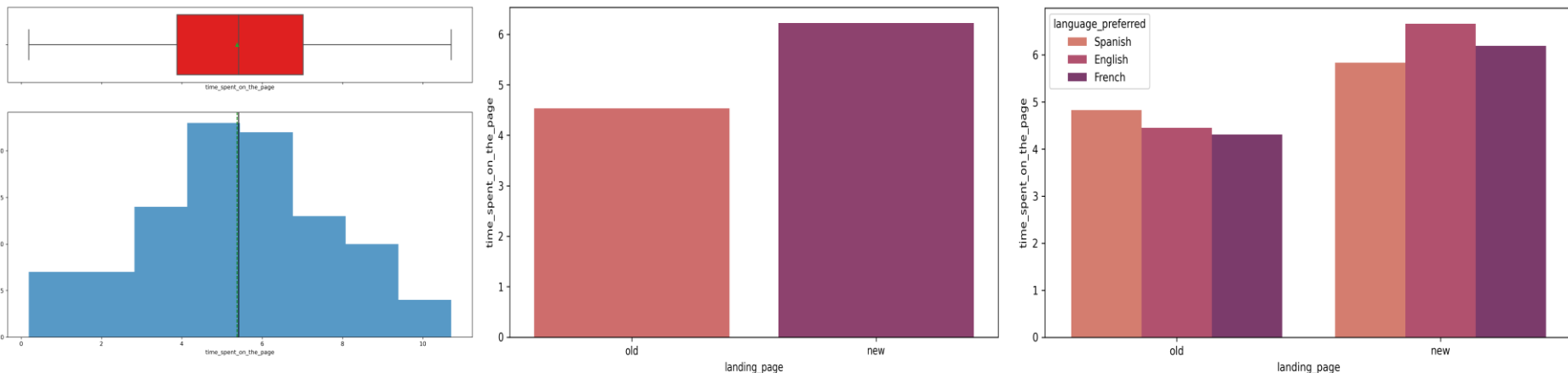
Variable	Description
user_id	This represent the user ID of the person visiting the website.
group	This represent whether the user belongs to the first group (control) or the second group (treatment).
landing_page	This represents whether the landing page is new or old.
time_spent_on_the_page	This represents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

Observations	Variables
100	6

Note:

- There are no missing value in the dataset.

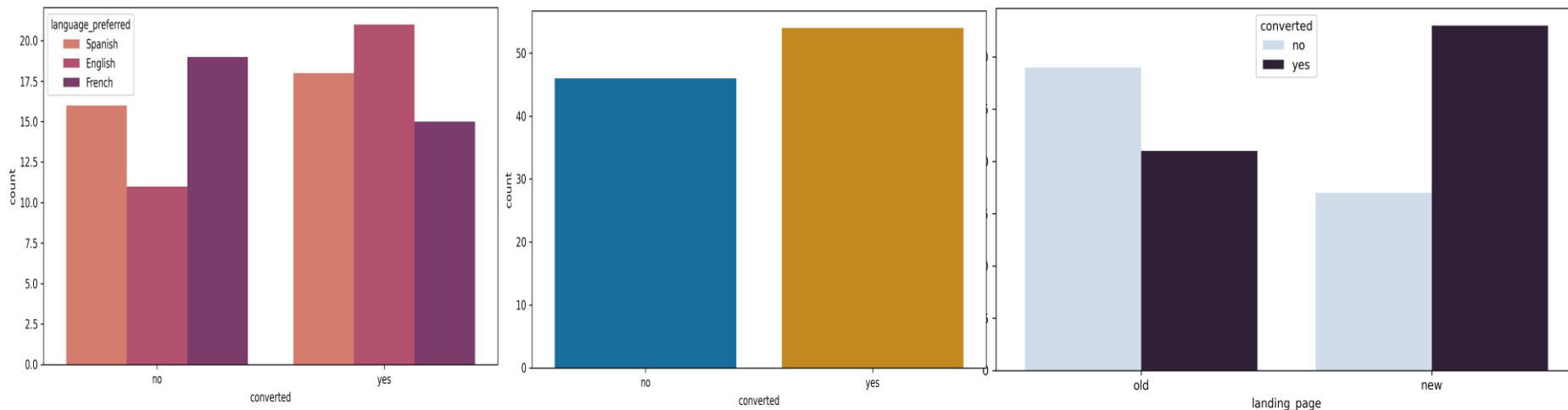
Exploratory Data Analysis – Time spent on the page



Observations;

- Mean time spent on the page by users is 5.37
- Users who land on the new page spends more time on the page than the user who land on the old page
- Users with English as preferred language spend the most time on the new page and user with Spanish as preferred language spend the most time on the old page.

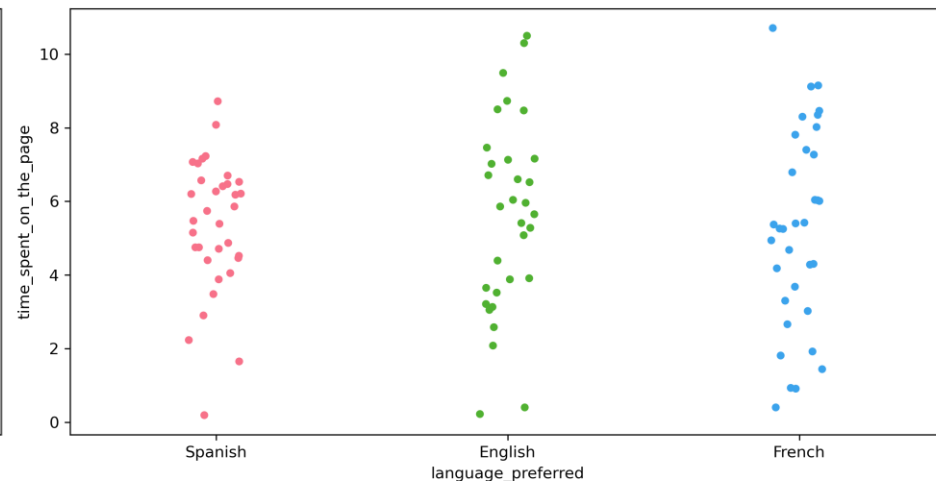
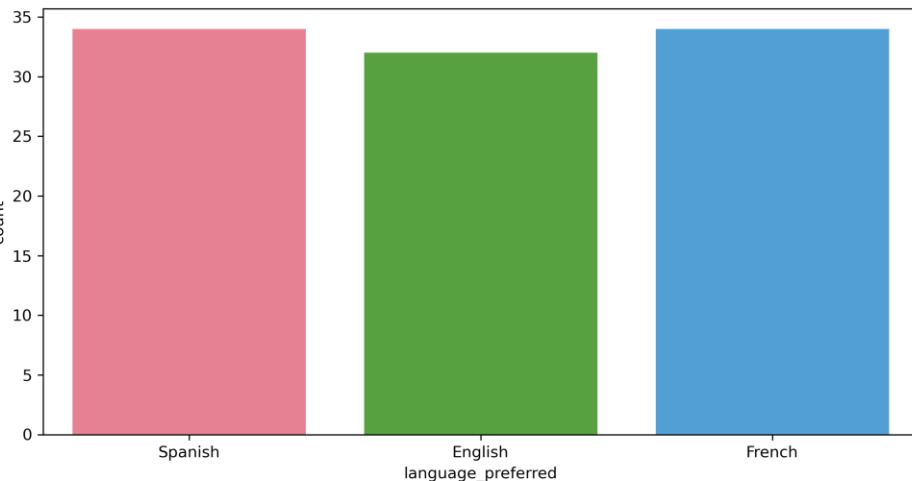
Exploratory Data Analysis – Converted



Observations;

- In general, there are more converted users.
- Users who prefer to view in English have the highest rate of converted users.
- Users who prefer to view in French have the highest rate of non-converted users.
- Conversion rate for the new page is greater than the conversion rate for the old page.
- Converted users in both groups spend more time on the landing page.

Exploratory Data Analysis - Converted



Observations;

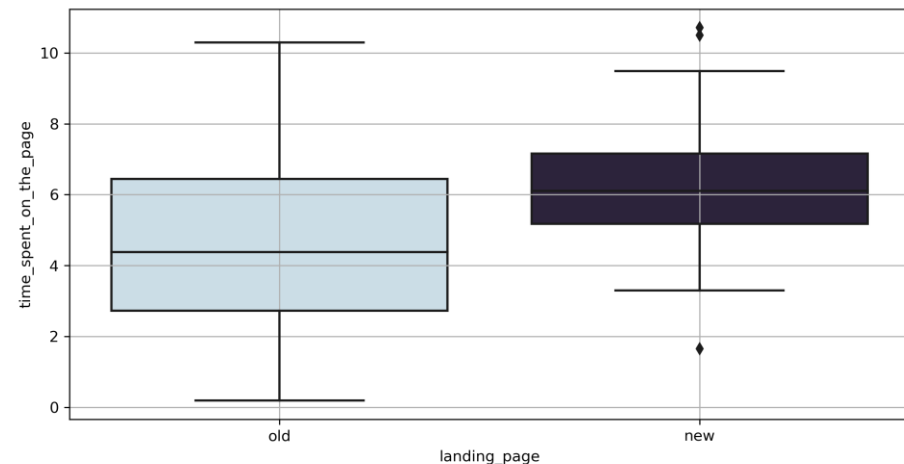
- Lesser users prefer to view the landing page in English compared to users that prefer viewing in French and Spanish.
- Users who prefer to view in Spanish spend lesser time on the landing compared to the other preferred language.

Statistical Analysis

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

Using the two independent sample t-test

- $H_0 : \mu_{new} = \mu_{old}$ (Users don't spend more time on the new landing page)
- $H_a : \mu_{new} > \mu_{old}$ (Users spend more time on the new landing page)



Insights;

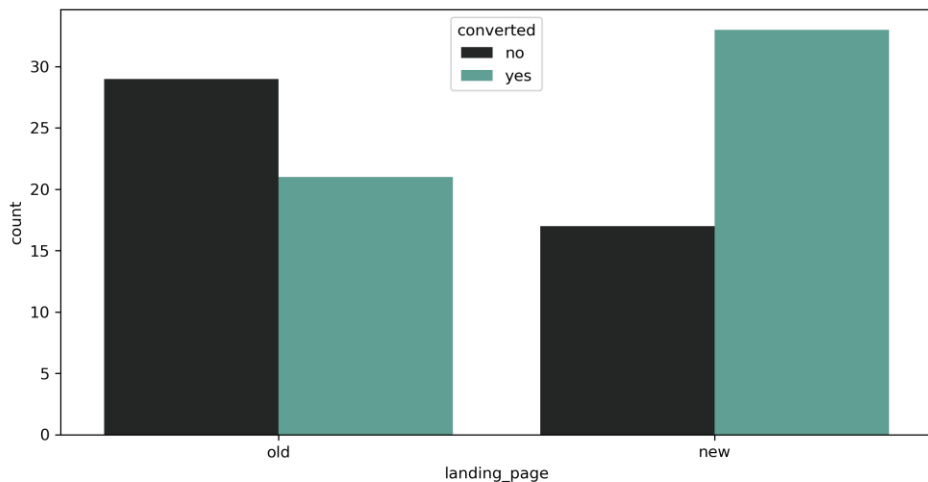
- From the analysis the p-value was lower than the significance level (0.05) and so the null hypothesis was rejected.
- Hence, there was enough statistical significance to conclude that that users spend more time on the new landing page than the old landing page.

Statistical Analysis

Is the conversion rate for the new page greater than the conversion rate for the old page?

Using the two independent sample t-test

- $H_0 : \mu_{new} = \mu_{old}$ (Conversion rate for the new page equals the conversion rate for the old page)
- $H_a : \mu_{new} > \mu_{old}$ (Conversion rate for the new page greater than conversion rate for the old page)



Insights;

- From the analysis, the p-value was greater than the significance level (0.005) and so we fail to reject the null hypothesis.
- Hence, there wasn't enough statistical significance to conclude that the conversion rate for the new page is greater than the conversion rate for the old page.

Statistical Analysis

Does the converted status depend on the preferred language?

- H_0 : Converted status is independent of preferred language
- H_a : Converted status depends on the preferred language

Language_Prefered	English	French	Spanish
Converted			
No	11	19	16
Yes	21	15	18

Insights;

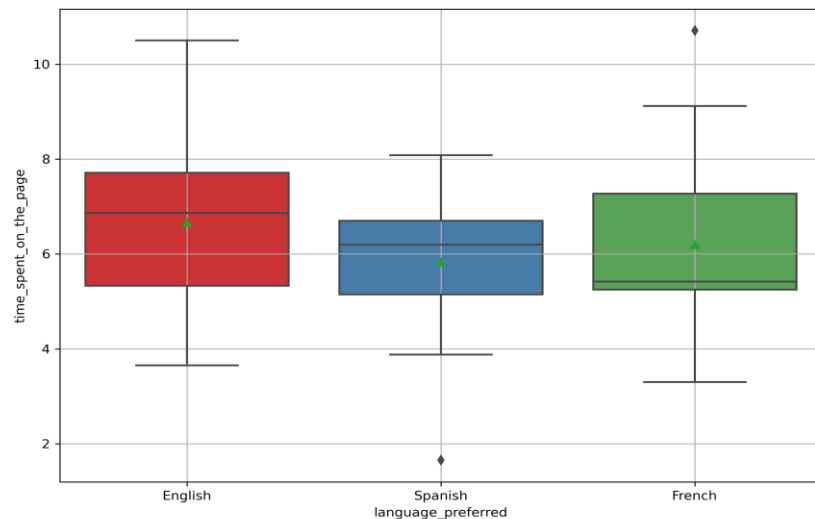
- From the analysis, the p-value was greater than the significance level (0.05) and so we fail to reject the null hypothesis
- Hence, there was enough statistical significance to conclude that the converted status is independent of preferred language at 5% significance level.

Statistical Analysis

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

Used the one-way ANOVA test;

- H_0 : The means of time spent on the new page variable with respect to each language preferred category are the same.
- H_a : At least one of the means of time spent on the new page variable with respect to each language preferred category are not the same.



Insights;

- The p-value was greater than the significance level(0.05) so we failed to reject the null hypothesis.
- Hence, there was enough statistical significance to conclude that the means of the time spent on the new page is the same for the different language users.

Conclusion

- User who got converted in both groups spend more time on the page.
- The treatment group landing on the new page spend more time on the page compared to the control group.
- Users with English as preferred language spend the most time on the new page and users with Spanish as preferred language spend the most time on the old page.
- Conversion rate for the new page is greater than the conversion rate for the old page.
- Users with English as preferred language have the highest conversion rate.

Recommendations

- The company should utilize the new landing page more as it proves its effectiveness in gathering new subscribers because users who landed on the new page spend more time on the page and it has higher conversation rate.
- The company needs to engage in more new features on the new landing page to attract more users to get converted.

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Happy Learning !

