E-news Express

- **New landing page's effectiveness.**

Background

The design team of the company has created a new landing page.

1. Randomly selected 100 users are divided equally into two groups.

2. The old landing page is served to the first group (control group) and the new landing page is served to the second group (treatment group).

3. Various data about the customers in both groups have been collected.

Objective

To extract actionable insights from the data and recommendations that will help to grow the subscriber numbers.

Questions to answer:

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

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

3. Does the converted status depend on the preferred language?

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

Data Overview

| Variable	Description
User id	The user ID of the person visiting the website.
group	Group user belongs to the first group (control) or the second group (treatment).
Landing page	Represents whether the landing page is new or old.
Time spent on the page	Represents the time (in minutes) spent by the user on the landing page.
converted	Represents whether the user gets converted to a subscriber of the news portal or not.
Language preferred	Represents the language chosen by the user to view the landing page.

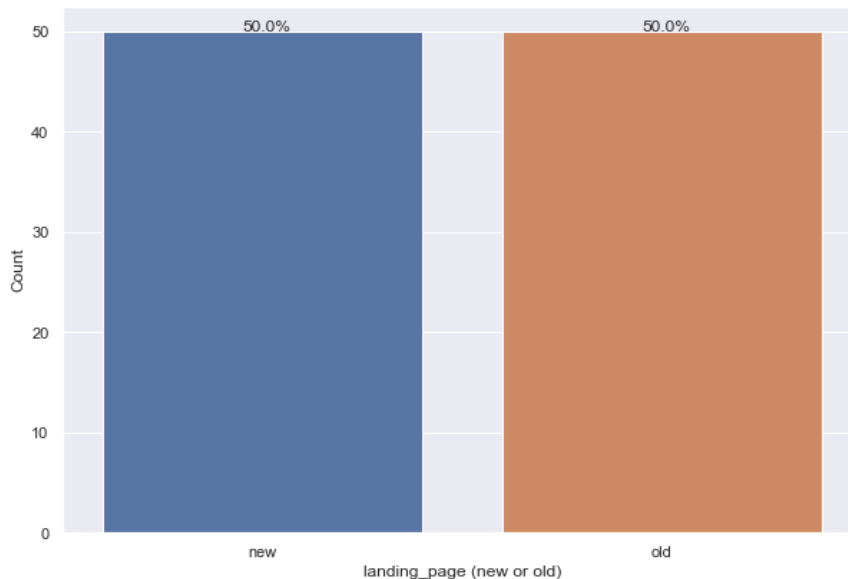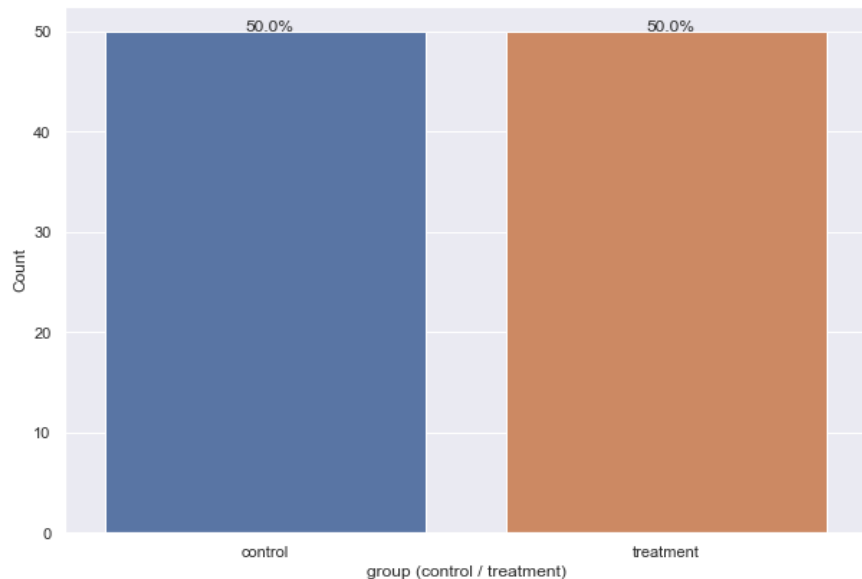| Observations	Variables
100	6

Null values
0

Exploratory Data Analysis - time_spent_on_the_page

Observations:

1. The mean time users spend on the web page is 5.38
2. The data follows almost normal distribution
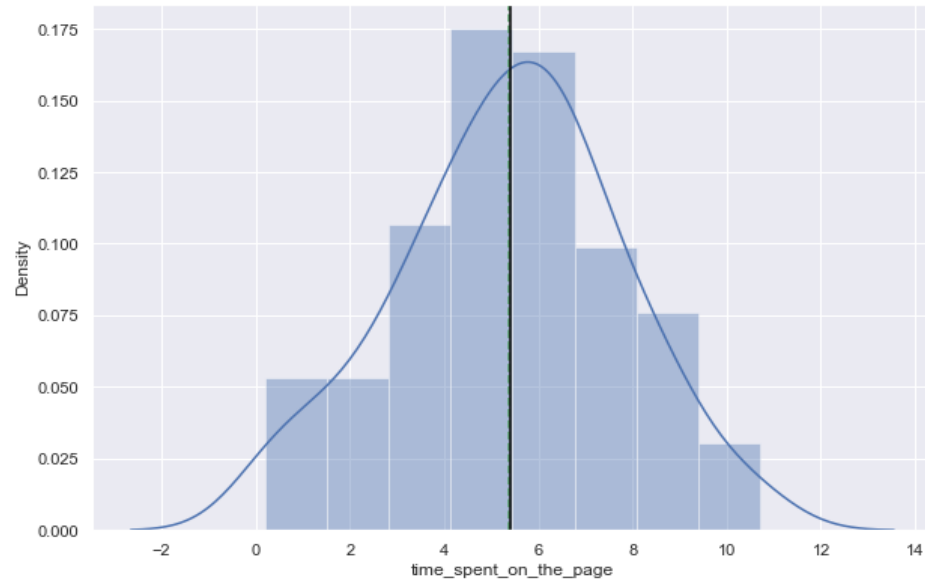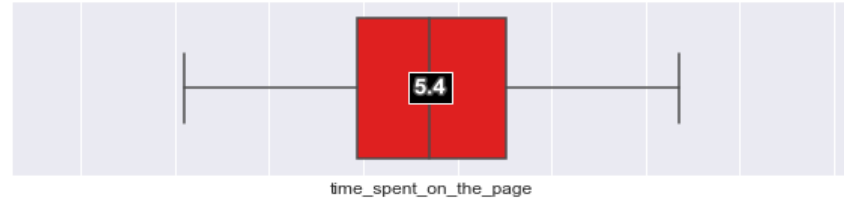
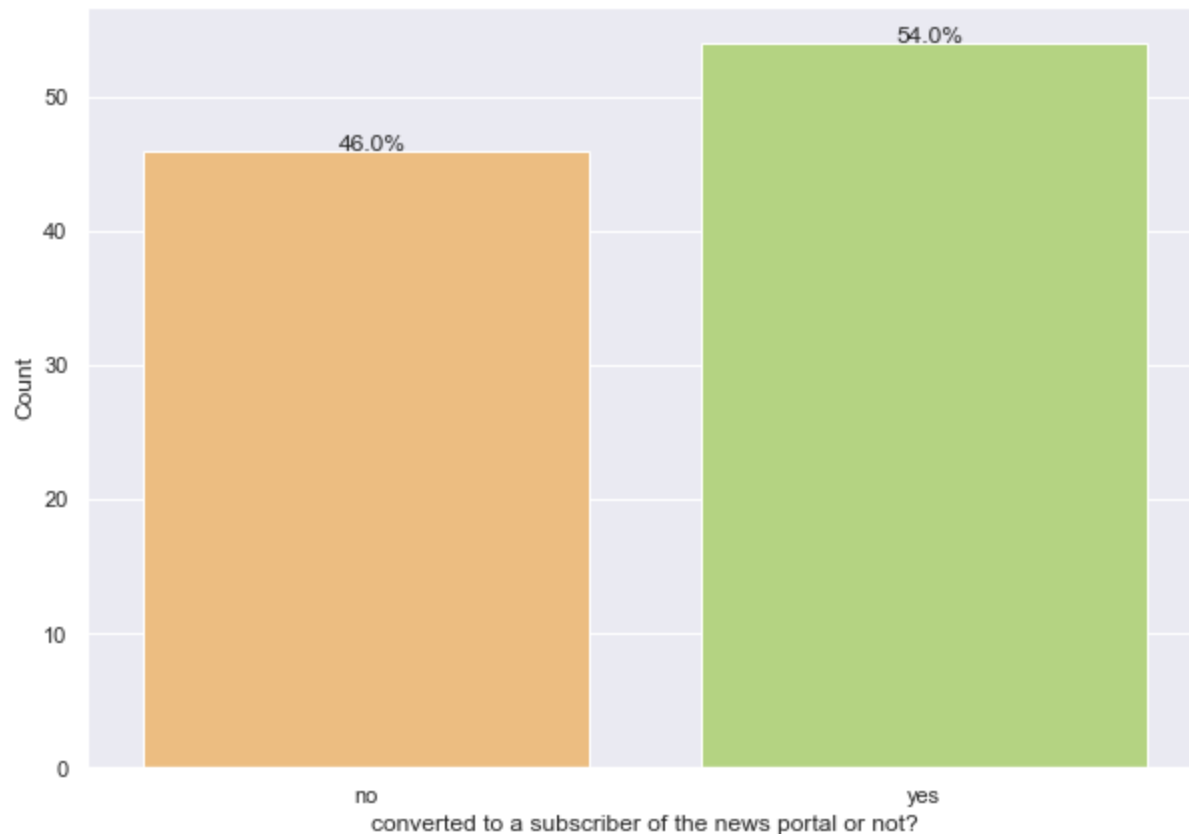# Exploratory Data Analysis – group, landing_page

100 users are divided equally into two groups Control and treatment

100 users are divided equally and served old and new landing page

The old landing page is served to the first group (control group) and the new landing page is served to the second group (treatment group).
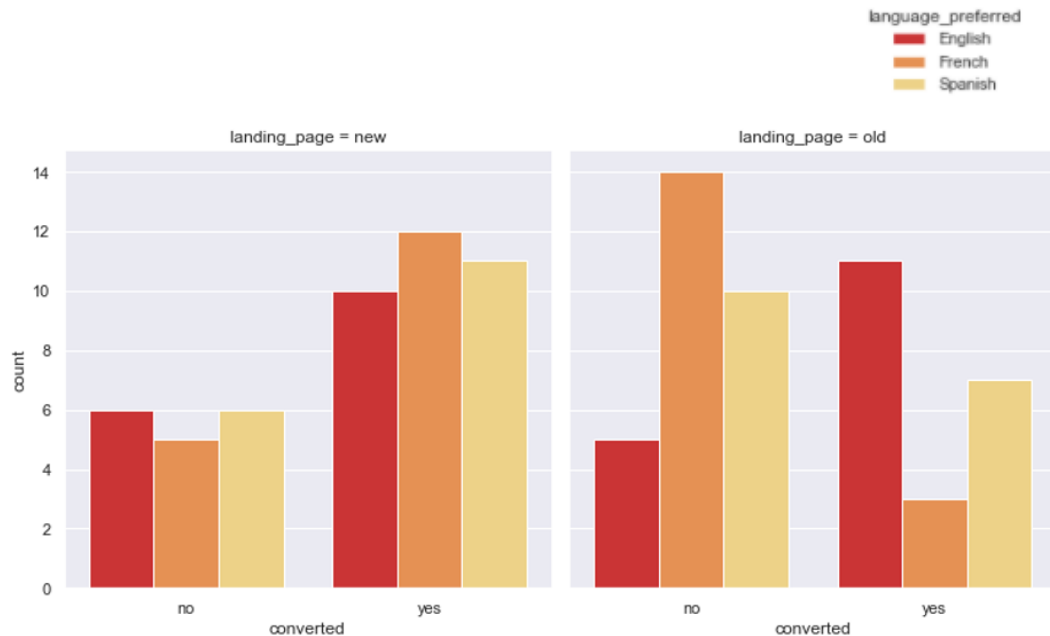
Exploratory Data Analysis – converted

Of the 100 users, users who got converted to subscribers form a larger percentage of about 54%

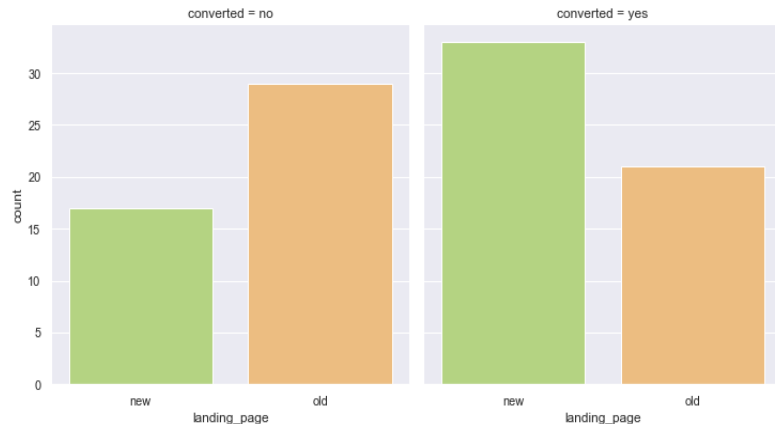# Observations on language_preferred
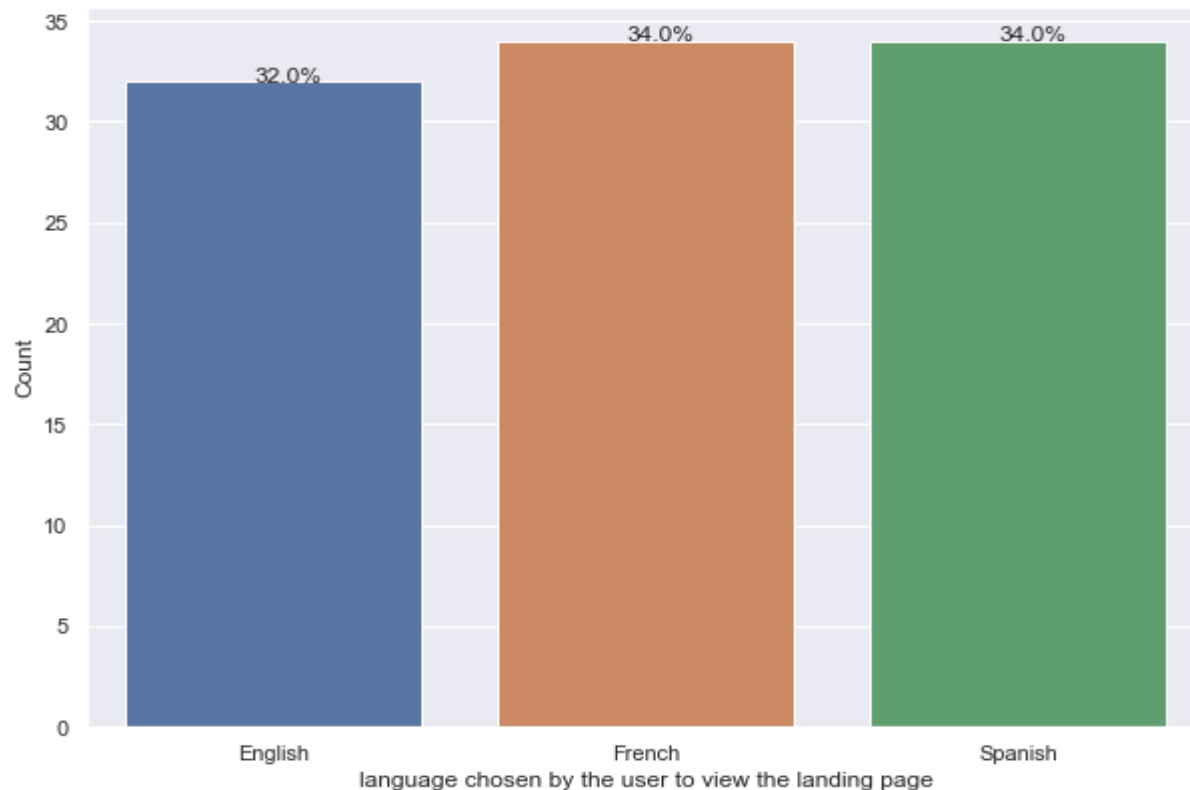
The data distribution between preferred languages of English, French and Spanish is almost uniform.
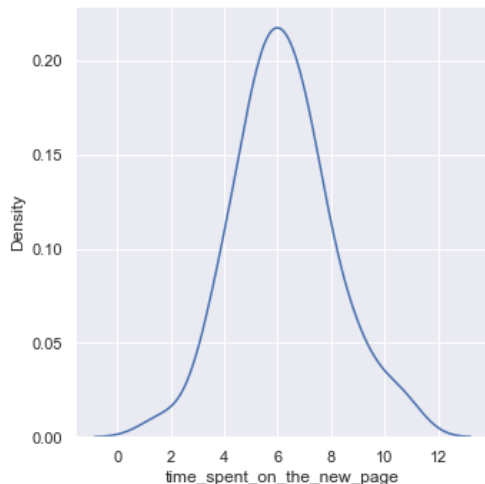
Bivariate Analysis

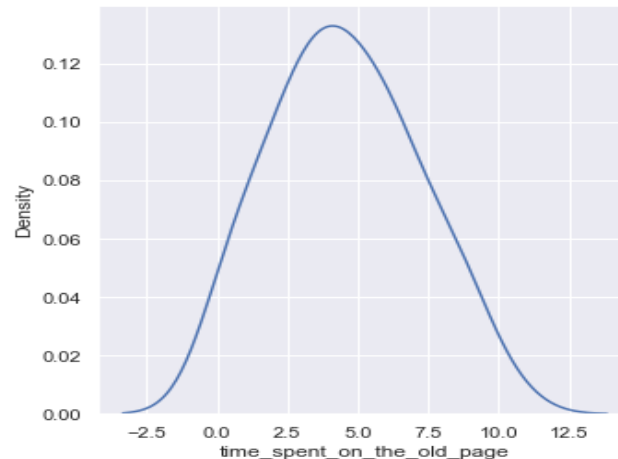The new landing page has more a uniform distribution compared to old landing page.

The new landing page has more users who have been converted to subscribers.

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

Time spent on the new landing page follows a near normal distribution with a mean of 6.22 and standard distribution of 1.82


Time spent on the old landing page follows a near normal distribution with a mean of 4.53 and standard distribution of 2.58

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

Applying a **statistical test** (Two Independent Sample T-test for Equality of Means - Unequal Std Dev) for the mean usage time for new landing page and old landing page reveals that

Conclusion:

- Uses spend **more** time on the **new landing page**.
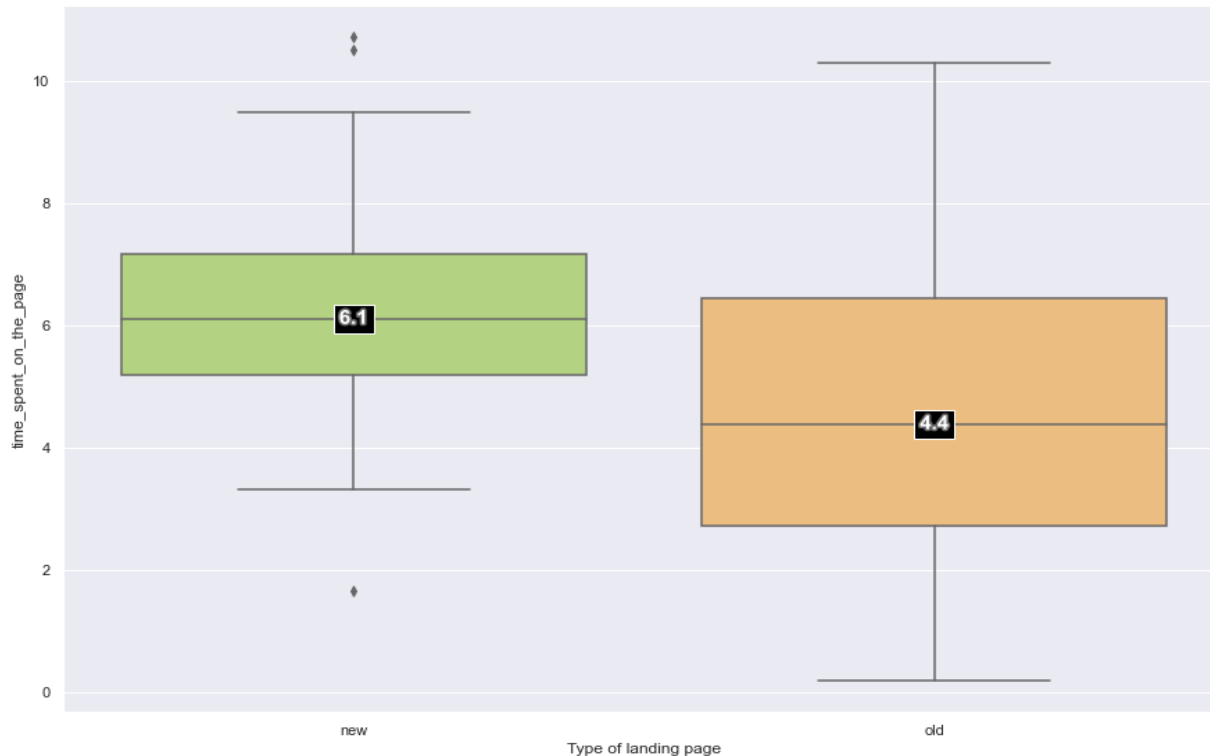
Is the conversion rate for the new page greater than the conversion rate for the old page?

Executing a **statistical test** (Proportions Z test) for the conversion rate

The proportions of **new page** user converted, and old page user converted are **0.66**, 0.42 respectively
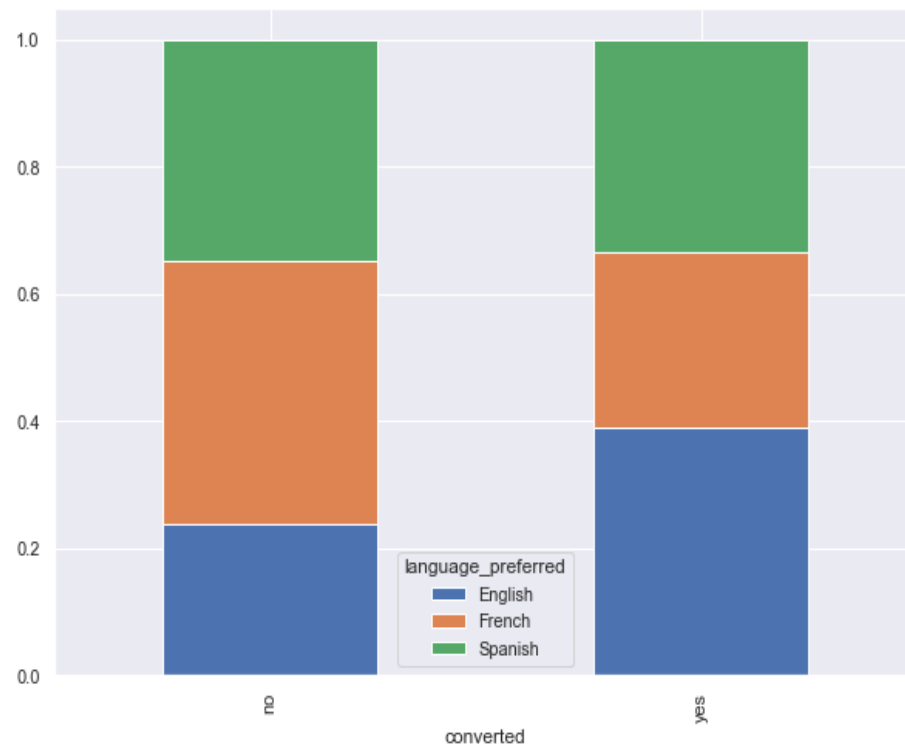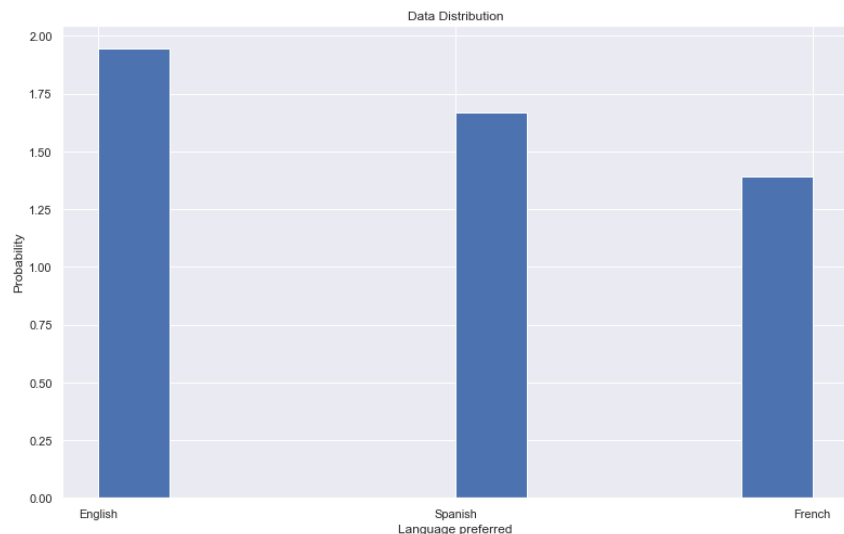
Conclusion:

- The conversion rate for the **new page is greater** than the conversion rate for the old page
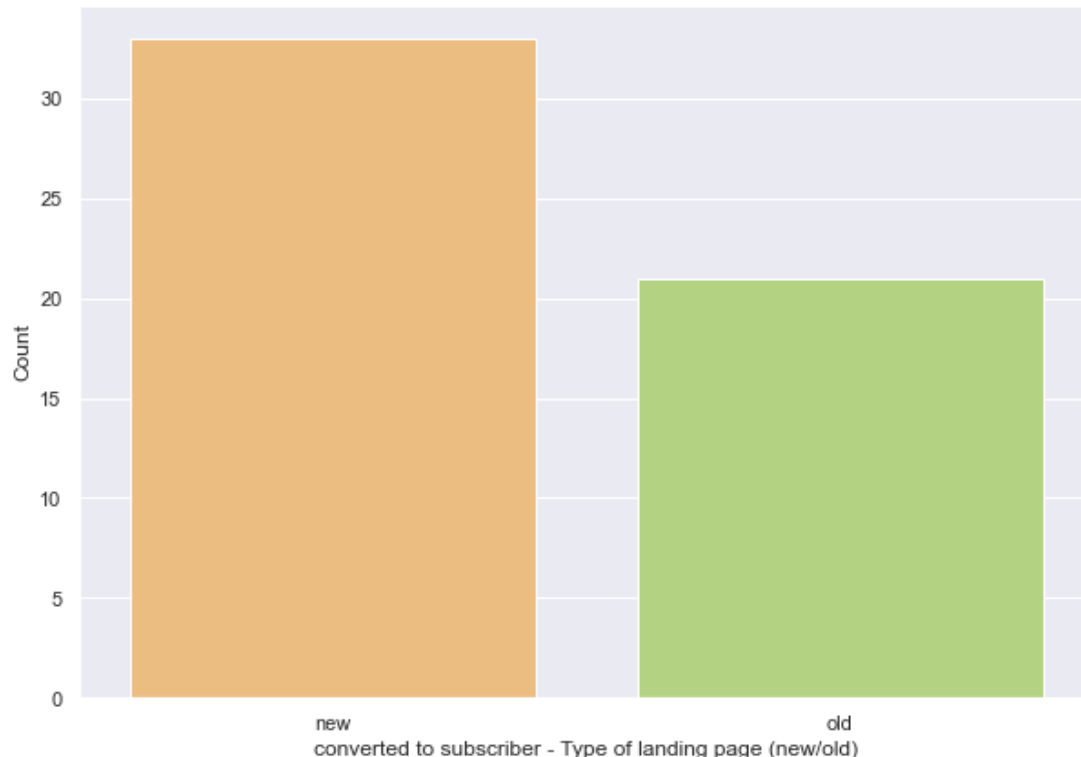
Does the converted status depend on the preferred language?

There is a uniform distribution for conversion status w.r.t to preferred language.

Data Distribution

Does the converted status depend on the preferred language?

Applying a **statistical test** (Chi-square test of independence of attributes) to verify if conversion status depends on a preferred language.

We will test the null hypothesis

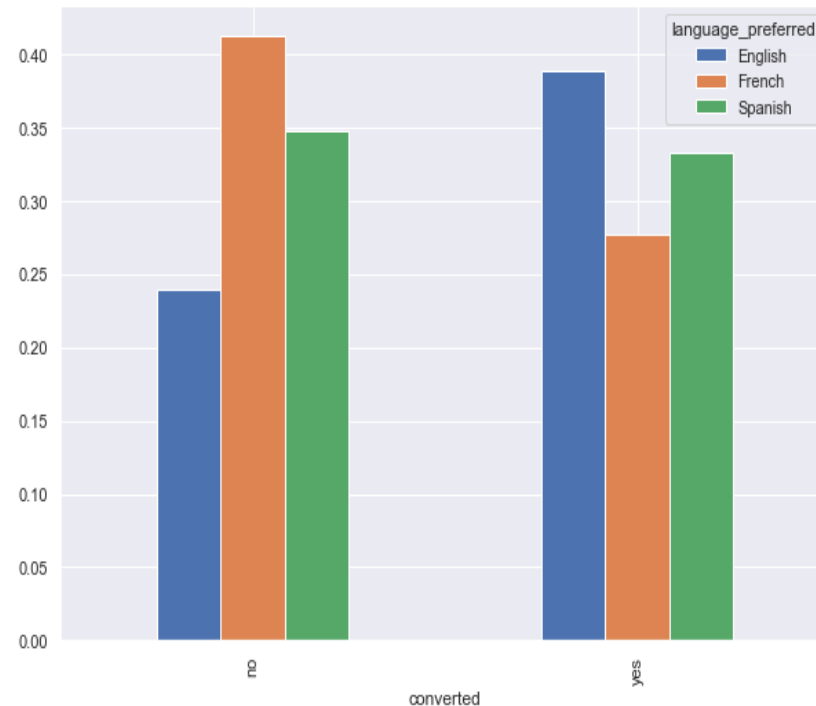H_0: Converted status is independent of preferred language.

against the alternate hypothesis

H_a: Converted status is dependent on preferred language.

The p-value 0.21 is much larger than the significance level of 0.05 and we cannot reject the null hypothesis (H_0)

Conclusion:

The conversion rate for the new page is independent of preferred language

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

Executing a **statistical test** (One-way **ANOVA**) for the conversion rate

• Shapiro-Wilk's test reveals Normal distribution.
• Levene's test results show All the variances are equal.

Conclusion:

- The mean time spent on the new page is same for the different language.

time_spent_on_the_page w.r.t. language_preferred(3 levels)
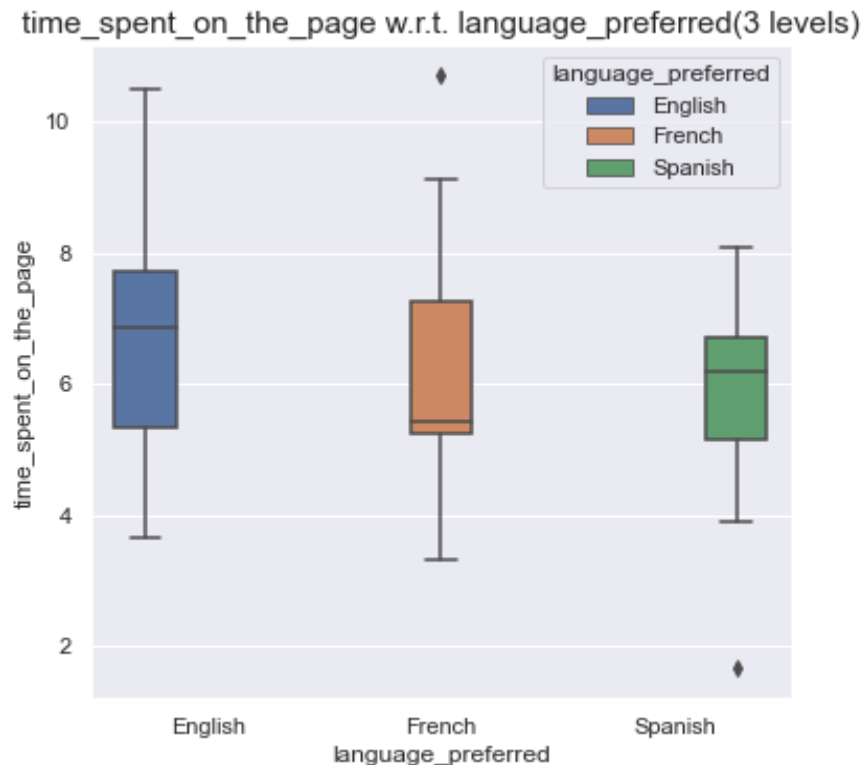
Business Insights and Recommendations

No	Key Questions:	Result of Statistical Analysis:
1	Do the users spend more time on the new landing page than the old landing page?	Yes , users spend more time on the new landing page than the old landing page.
2	Is the conversion rate for the new page greater than the conversion rate for the old page?	Yes, The conversion rate for the new page is greater than the conversion rate for the old page.
3	Does the converted status depend on the preferred language?	The conversion rate for the new page is independent of preferred language.
4	Is the mean time spent on the new page same for the different language users?	Yes, the mean time spent on the new page is same for the different language.

Conclusion

- Dataset of 100 observation was analyzed. This data contained the usage characteristics of two groups. The old landing page is served to the first group (control group) and the new landing page is served to the second group (treatment group).
- The key feature will be landing page type and time spent on the page . Also related is preferred language.

- **We can summarize that:**
1. Users spend more time on the new landing page than the old landing page.
2. The conversion rate for the new page is greater than the conversion rate for the old page.
3. The conversion rate for the new page is independent of preferred language.
4. The mean time spent on the new page is same for the different language.

Recommendation to business

- The new landing page is more successful in converting users to subscribers.
- Users spend more time on the new landing page, irrespective of the preferred language.