E-News Express: Landing Page Analysis

Project 2, Business Statistics

4/13

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Executive Summary

The purpose of this analysis was to test the effectiveness of converting new subscribers by comparing the new landing page against the old in. The data set comprised 100 users of two equal and independent populations, using both the new and old landing pages, to evaluate the time spent on each page, the conversion rate, and the behaviors of language preferences.

Four hypothesis were tested to draw conclusions about the sample data. With these test it was found that more time was spent on the new landing page with an increased conversion rate which did not have enough evidence to suggest it was dependent on language preference. There was also enough evidence to suggest that language preferences spend a similar amount of time on the landing page.

E-news should use the new landing page which increases user engagement time, as well as increase its monthly subscriber conversion rate.

Business Problem Overview and Solution Approach

The executives at E-news Express are of the opinion that there has been a decline in new monthly subscribers compared to the past year because the current webpage is not designed well enough in terms of the outline & recommended content to keep customers engaged long enough to make a decision to subscribe.

Solutions

The E-news Express team should use the new landing page to increase user engagement. This provides a boost to the average time on the page and reduces the deviation from that time.

E-news should introduce content that appeals to French and Spanish speakers, who have a lower conversion rate compared to English users.

Time on Landing Pages

The landing pages hold a majority of users between 4 and 7 minutes. The average engagement time is roughly 5 and a half minutes with the least amount of time on the page at 15 seconds and the greatest amount of time at 10 minutes and 45 seconds.
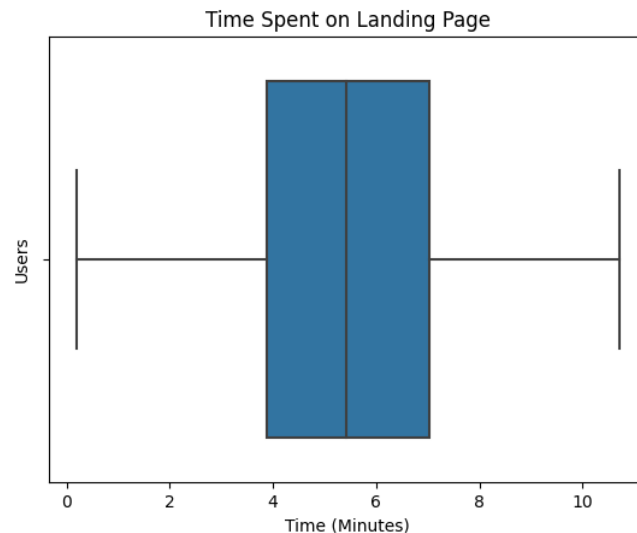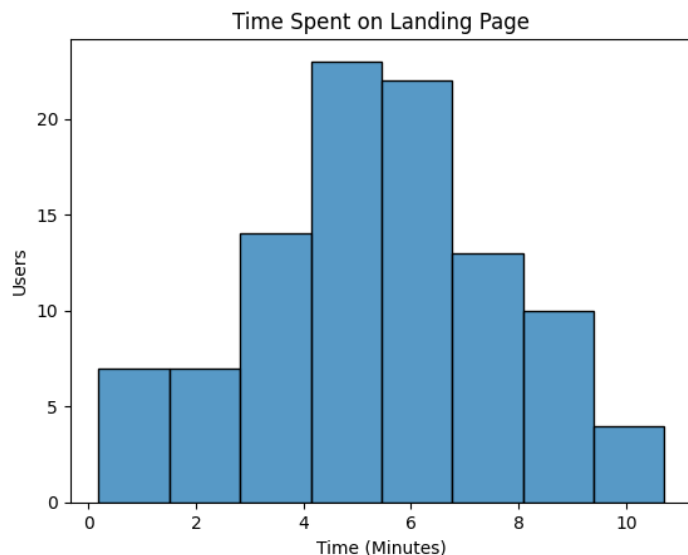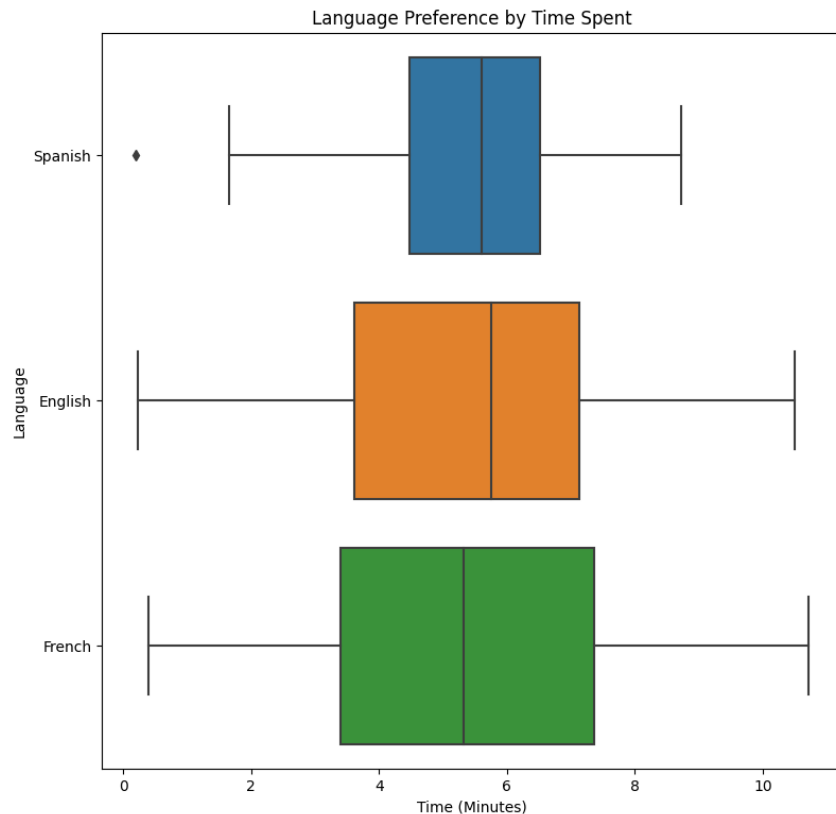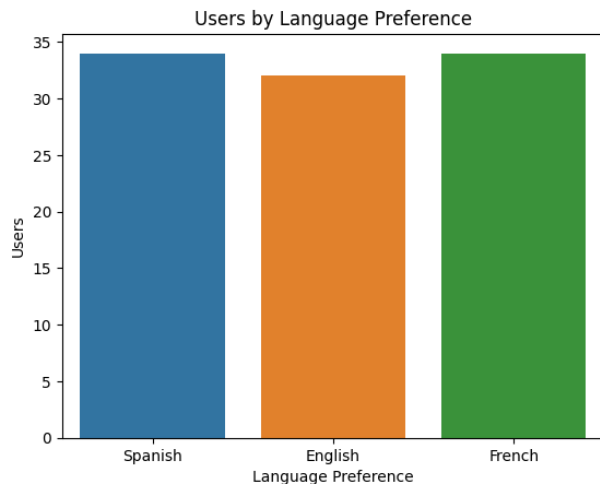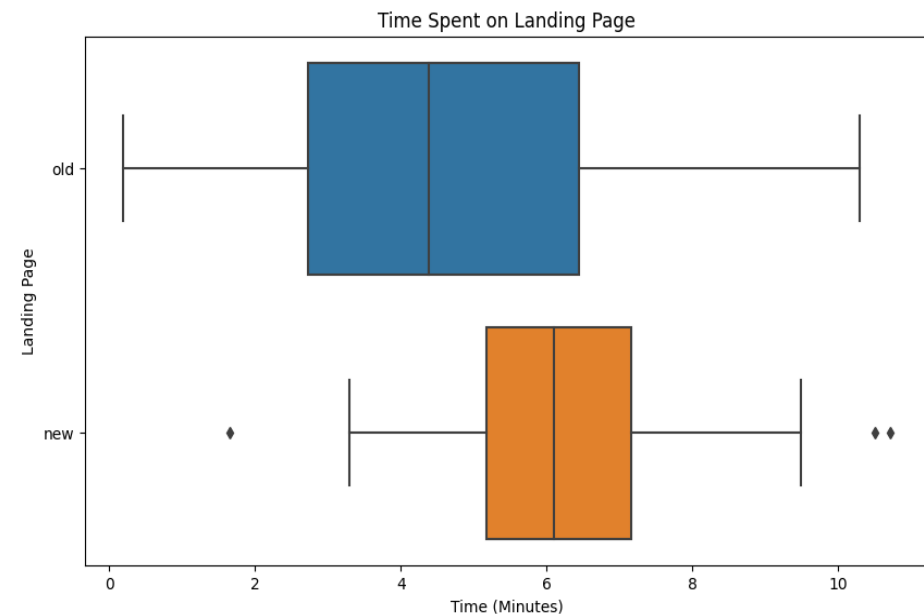
Language Preferences

Users represent three language preferences within a normal distribution.

Of the three languages represented we see that the time spent is similar across all of them.

Language Preference by Time Spent

Users by Language Preference

Do users spend more time on the new landing or the existing landing page?
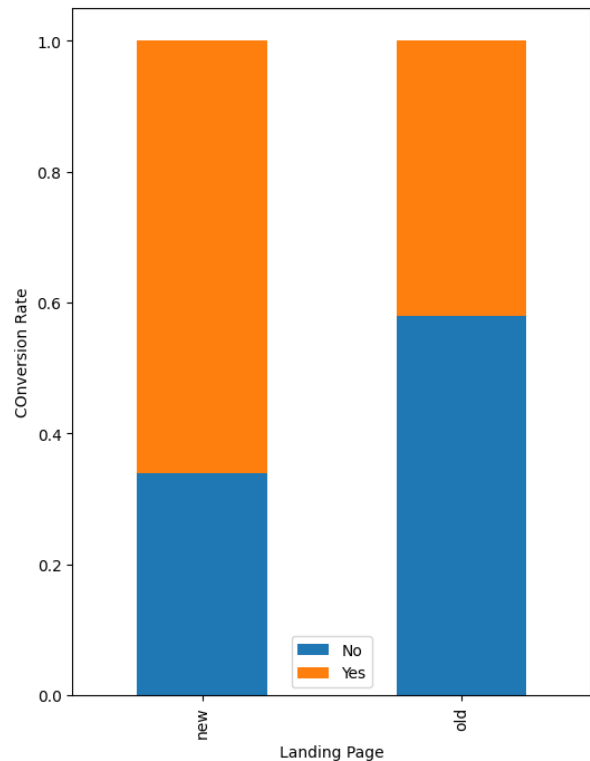

Time Spent on Landing Page

There is enough statistical evidence to claim that more time is spent on the new landing page.

Users spent on average more time on the new landing page with a more accurate assumption of that time.

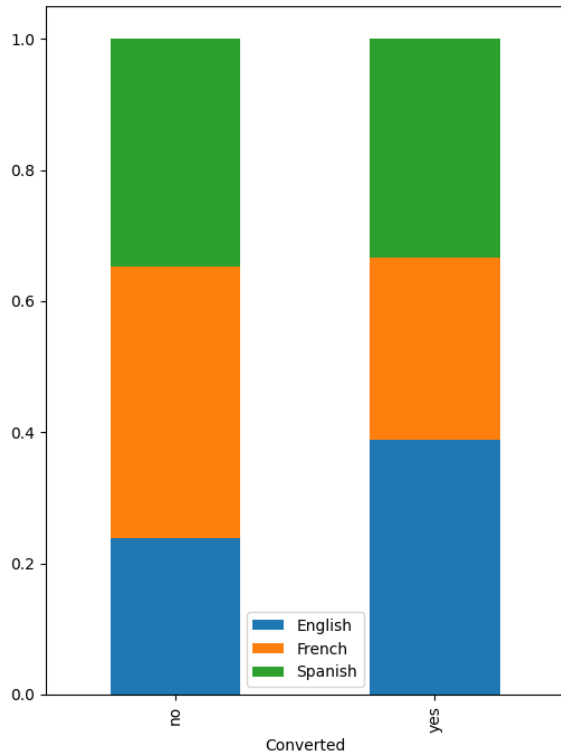*Link to Appendix slide on details of the test performed*

Conversion Rate by Landing Page

There is enough statistical evidence to claim that the conversion rate is greater for the new landing page.

Link to Appendix slide on details of the test performed

Does the conversion rate depend on language preference?

There is not enough evidence to suggest that the conversion rate is dependent of language preference.

English user were the most likely to convert follow by Spanish users. French users were more likely not to convert.

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

Link to Appendix slide on details of the test performed

Do language preferences spend the same amount of time on the landing page?

Language Preference by Time Spent
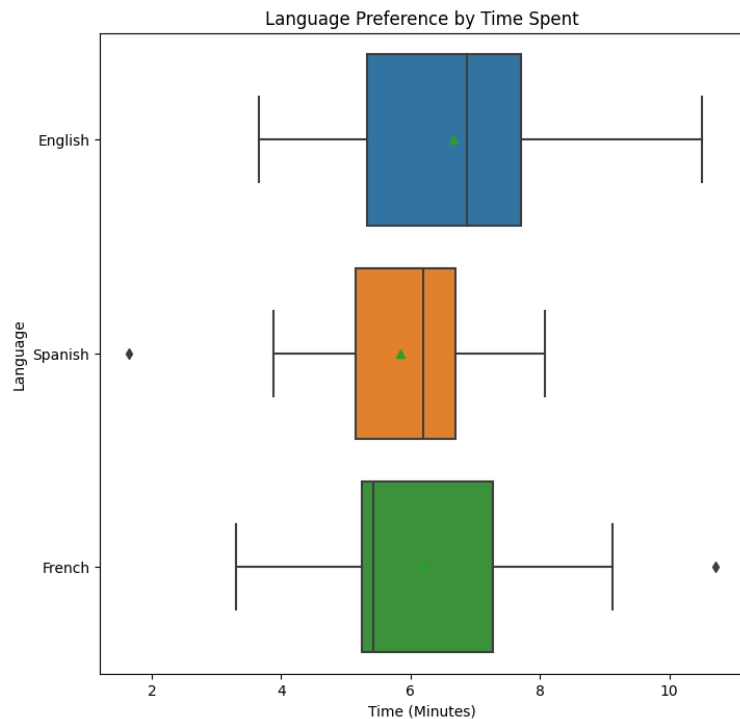
There is enough evidence to suggest that language preferences have the same variance of time spent on the landing page and they also spend a similar amount of time on the page.

English speakers spend the most time engaged followed by French and the Spanish.

Language Preference	Mean (minutes)
English	6.66
French	6.20
Spanish	5.83

Link to Appendix slide on details of the test performed

APPENDIX

Data Background and Contents

The data analyzed consisted of 100 individuals using two unique landing pages to evaluate the conversion rate of new subscribers. There were three unique language categories as well.

Users spent an average of 5.38 minutes on either landing page with a majority of users spending less than 7.02 minutes. The least amount of time spent on a page was roughly 15 seconds and the greatest amount of time spent was around 10 minutes and 45 seconds.

Summary of Users				
	Group	**Landing Page**	**Converted**	**Language Preference**
Count	100	100	100	100
Unique	2	2	2	3
Top	control	old	yes	Spanish
Freq	50	50	54	34

Summary of Time Spent		
	User Id	**Time Spent on Page**
Count	100	100.00
Mean		5.38
Std		2.38
Min		0.19
25%		3.88
50%		5.42
75%		7.02
Max		10.71

Hypothesis Testing Details

Hypothesis Test selected
  Two Sample Independent T-test

Null and Alternative Hypothesis
  $H0: \mu1 = \mu2$
  $Ha: \mu1 > \mu2$

Level of Significance

  $\alpha = 0.05$

p-value obtained

  0.000139

Standard Deviations

  Time spent on the new page is: 1.82

  Time spent on the old page is: 2.58

The p-value is less than the .05 level of significance rejecting the null hypothesis.

Hypothesis Testing Details

Hypothesis Test selected

    Two Portion Z-test

Null and Alternative Hypothesis

    $H0{:}\mu1{=}\mu2$

    $Ha{:}\mu1{>}\mu2$

Level of Significance

    $\alpha{=}0.05$

p-value obtained

    0.008026

The p-value is less than the .05 level of significance rejecting the null hypothesis.

Hypothesis Testing Details

Hypothesis Test selected

Chi Square Test for Independence

Null and Alternative Hypothesis:

$H0$: Conversion rate is dependent on preferred language

Ha: Conversion rate is independent on preferred language

Level of Significance

α=0.05
p-value obtained

0.212988

The p-value is greater than the .05 level of significance so we fail to reject the null hypothesis.

Hypothesis Testing Details

Hypothesis Test selected

One-Way ANOVA Test

Null and Alternative Hypothesis

$H0$: All of the language preferences have a similar variance of time spent on the new page

Ha: At least one language preference spends more time on the new page than the others.

Level of Significance

α=0.05
p-value obtained

0.432041

The p-value is greater than the .05 level of significance so we fail to reject the null hypothesis.

Happy Learning !