

Love Holidays Data Analyst Assessment

Introduction

Love holiday is a rapidly growing online travel industry in the UK. The love holidays website allows customers to choose multiple destinations without a date, it allows customers to choose from trip advisor ratings and customer ratings, it has travel package recommendation. Love holidays are different compared to other booking website since it provides ATOL certificate. In addition, the company has price match guarantee.

Objective

In this report we focus on the following aspects:

- Identify most important variables
- Identify which product should be more focused to generate revenue.
- The motivation for this report is to increase the revenue of the company.
- Identify customers who mostly like to purchase in *stage_4* based on their *search_feature*. We also want to identify products that resettled in purchase, products that are presented in *stage_4* and show these products which were valuable early on that in stage 1.

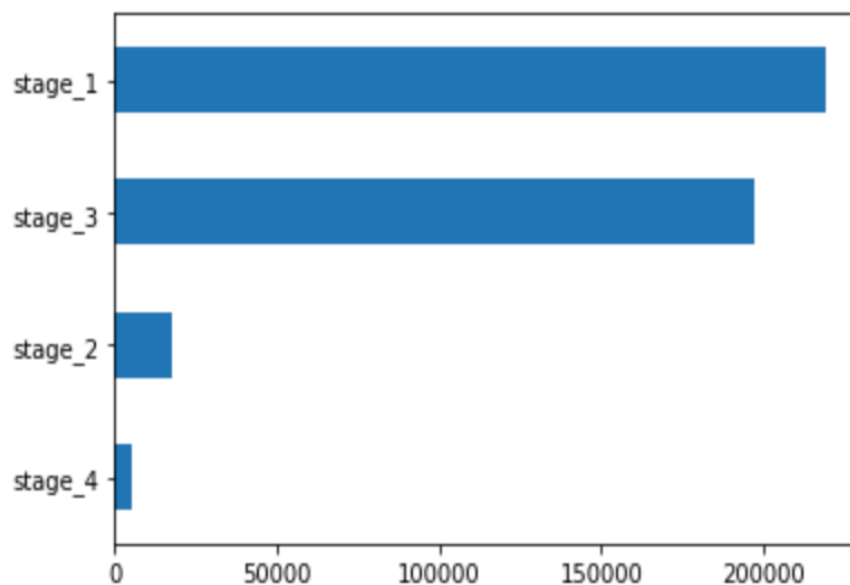
Methodology

- In this Data we have selected the categorical data and compare it to the other variable
- We combined the data across multiple days and analyse in combination to reduce noise resulting from individual daily observations
- The variables we selected to report analysis are Stage 1/2/3/4, Search feature 1/2/3/4/5, Product feature 1/2/3/4/5/6/7. In one part we analyse the stage and search feature and in second part we analyse stage and product feature
- we conduct an analysis to get occurrence rate of search feature and product feature at different stage.

Exploratory Data Analysis

Stage Feature

In this figure we can notice that the stages are not sequential i.e. it shows the customers who went through *stage_1* dropped out in *stage_2* and again joined in *stage_3*. So, for this report analysis we focus on *stage_1* and *stage_4*, with the assumption that the customer first enters the website at *stage_1* and *stage_4* results in a purchase. We want to increase the number of customers who move to *stage_4*.

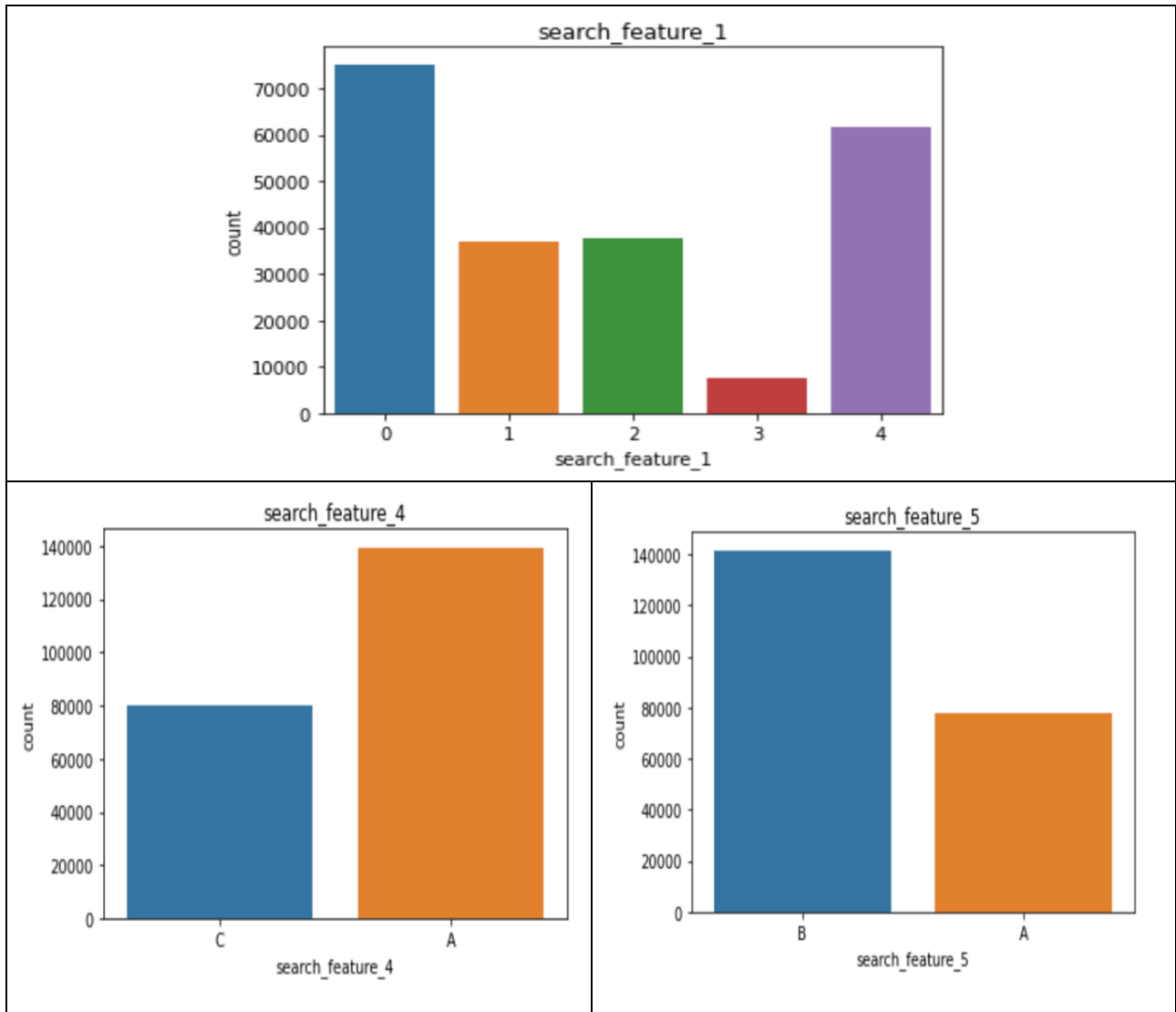


Search Features

Search_feature_1: In the histogram we can notice there are 0/1/2/3/4 options to be selected in search feature 1 are the most selected feature and 0 and 4 compared to 1/2/3.

Search_feature_4: in the histogram we can notice there are A and C option to be selected in search feature 4 and the most selected feature is A

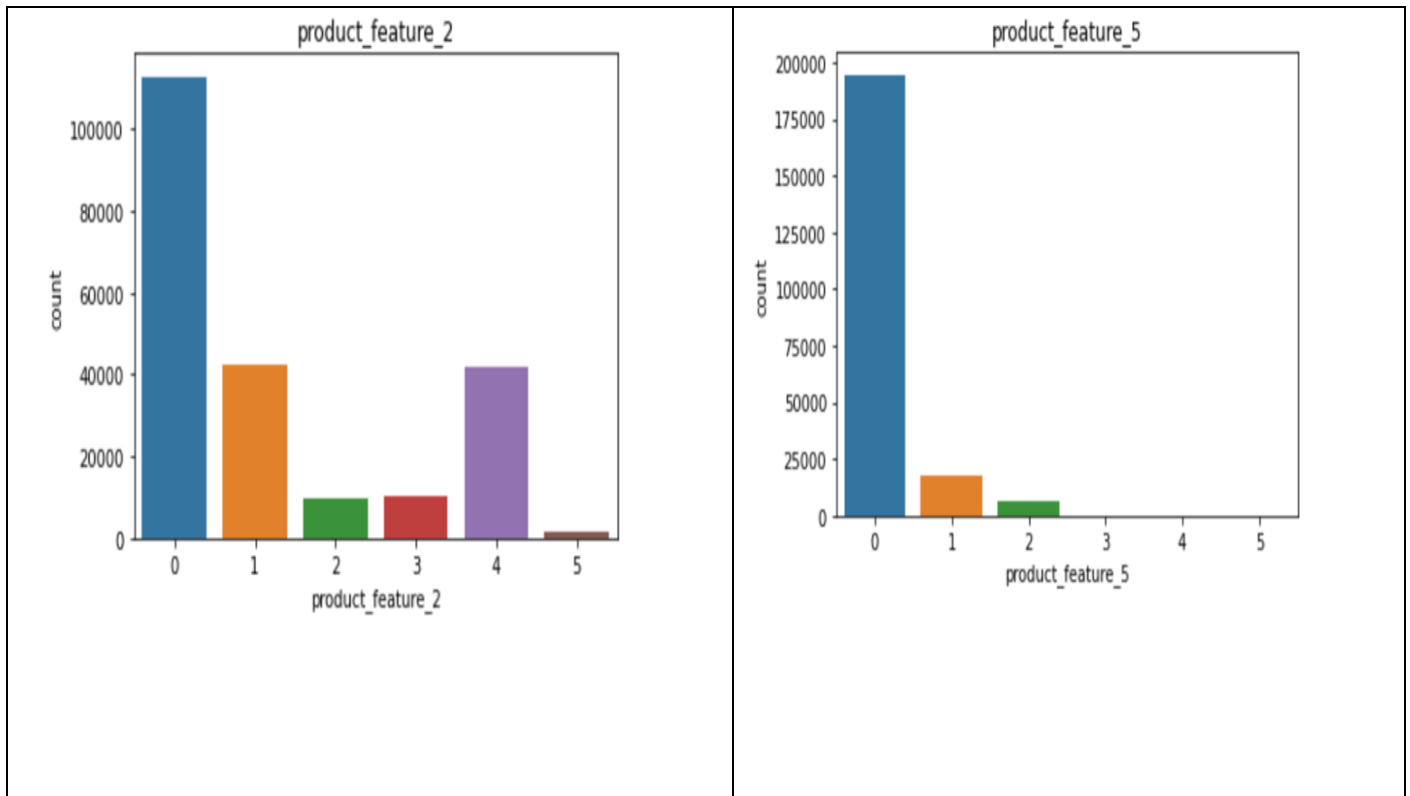
Search_feature_5: in the histogram we can notice there are two options A and B options to be selected in search feature 5 and the most selected feature is B.



Product Feature

Product_feature_2: we can notice most customers choose the product feature of 0 compared to other product feature 2

Product_feature_5: we can notice that the customers choose the product feature of 0 compared to 1 and 2 , The product feature 3/4/5 is null , can interpret that no customers choose during this period selected the package of 3/4/5 in the product_feature_5



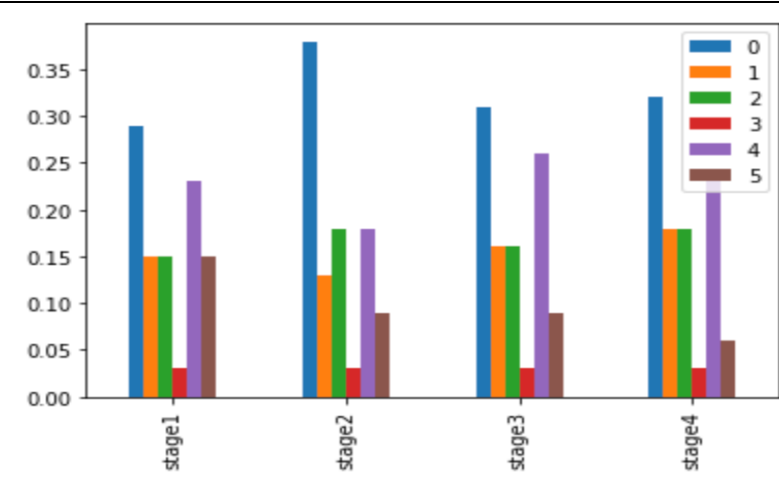
Customer Conversion Analysis

In this report we analyse the search feature and product feature in different stages individually. Here we can notice the rate at which potential customers move to stage are the customers we need to increase the Customer Conversion.

Search Feature 1

- we are considering stage 1 and stage 4 and search feature 1 for analysis.
- **search_feature_1:** package 0 was mostly like to purchase in stage 4, we can notice almost 3 % increase in stage 4. In search feature 1 package 5 ,there was 7%.

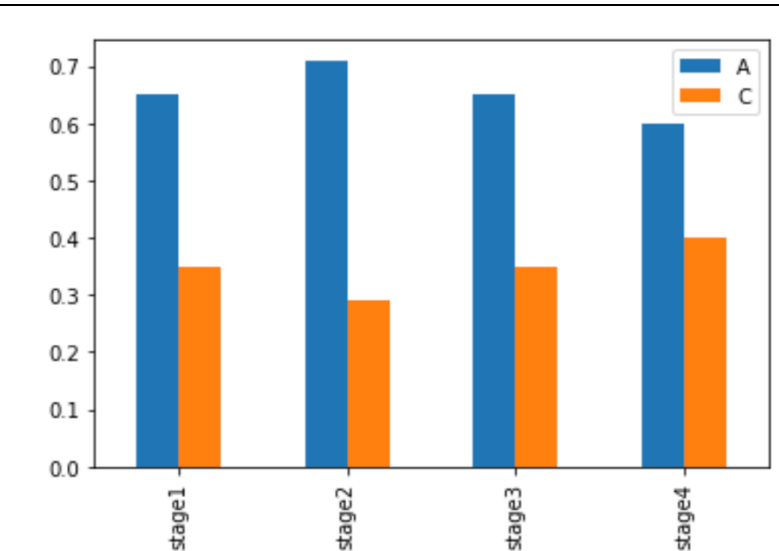
	stage1	stage2	stage3	stage4
0	0.29	0.38	0.31	0.32
1	0.15	0.13	0.16	0.18
2	0.15	0.18	0.16	0.18
3	0.03	0.03	0.03	0.03
4	0.23	0.18	0.26	0.23
5	0.15	0.09	0.09	0.06



Search Feature 4

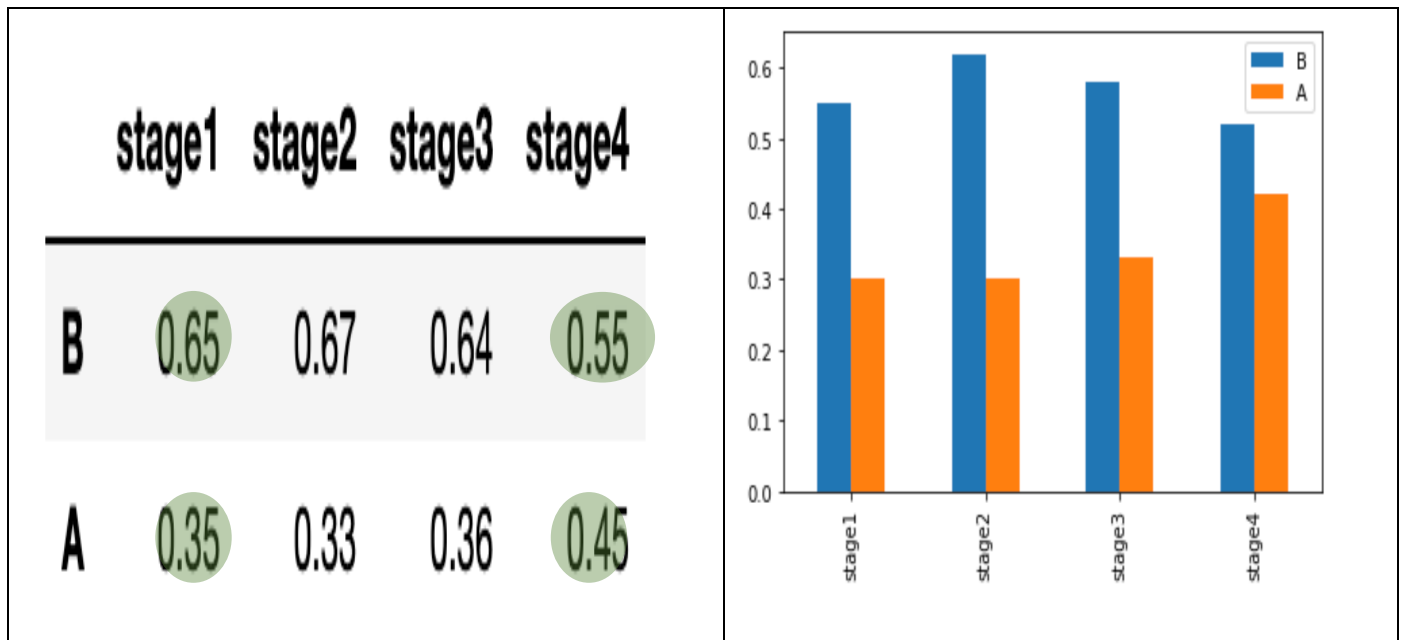
- **Search_feature_4:** package A, we can notice almost 6 % drop in stage4
On the other hand, package C was most likely to be purchased in stage 4, we can notice almost 6% increase in the stage 4.

	stage1	stage2	stage3	stage4
A	0.64	0.7	0.63	0.58
C	0.36	0.3	0.37	0.42



Search Feature 5

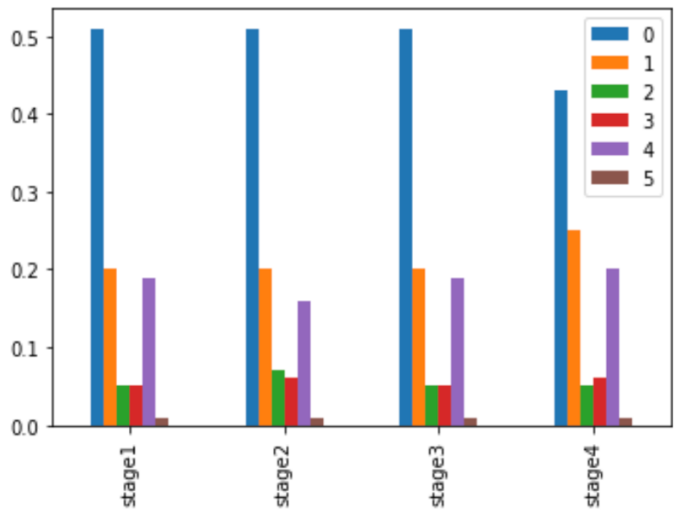
- **Search_feature_5:** package A was most likely to be purchased in stage 4, we can notice almost 10% increase in the stage 4
- package B most customer was not converted in stage 4, we can notice almost 10 % drop in stage 4



Product Feature 2

- **Product_feature_2 :**package 0 when we compare stage 1 and stage 4, there is a drop in conversion of customers up to 8 % drop
- **Product_feature_2 :**package 1 when we compare stage 1 and stage 4, we can notice almost 5 % increase in stage 4

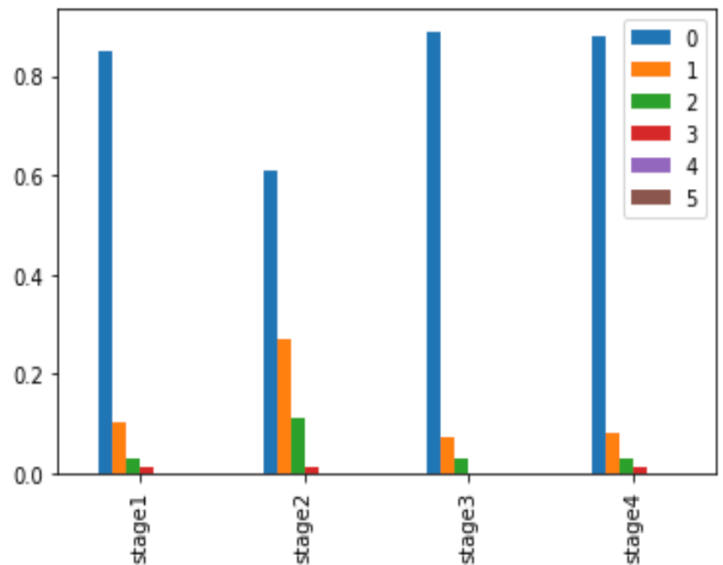
	stage1	stage2	stage3	stage4
0	0.51	0.51	0.51	0.43
1	0.20	0.20	0.20	0.25
2	0.05	0.07	0.05	0.05
3	0.05	0.06	0.05	0.06
4	0.19	0.16	0.19	0.20
5	0.01	0.01	0.01	0.01



Product Feature 5

- **Product_feature_5** :package 0 when we compare stage 1 and stage 4, there is a increase in conversion of customers up to 3 %
- **Product_feature_5** :package 1 when we compare stage 1 and stage 4 of , we can notice almost 2 % drop in stage 4

	stage1	stage2	stage3	stage4
0	0.85	0.61	0.89	0.88
1	0.10	0.27	0.07	0.08
2	0.03	0.11	0.03	0.03
3	0.01	0.01	0.00	0.01
4	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	NaN



Conclusions

- The analysis is done on univariate way to get deeper understanding across multiple feature and multiples products
- Based on the analysis, we can compare *product_feature* and *search_feature* and conclude that the customers who reached *stage_4* are to use to identify high value customers
- In *search_feature* and *product_feature* which has a highest occurrence rate in stage 4 must be concentrated to know what the customers are searching for. i.e., These search feature and product feature are very popular for the users
- **In the next steps of the research analysis, we can construct unique key for multiple search feature and product feature and will be able to identify the products that are more in demand in search features.**

APPENDIX Column Information

Row_id	Unique identifier for each row
Search Date	The day the search was made
Stage 1 – 4	The user reached the first/second/third/fourth stage of the purchase funnel
Search feature 1- 5	Features that relate to the search that the user conducted on our platform e.g., the dates of travel, details of who is travelling etc.

Product feature 1-7

Features that relate to the product that was selected by the user e.g., price of the package, board basis (all-inclusive, room only etc.)