

# Tourist spending behavior prediction

## **TANZANIA TOURIST REPORT**

# PROJECT OBJECTIVE

This project is aimed at building a machine learning model that will predict tourist spending behavior to help tourism operators estimate tourists expenditure.

# DATA OVERVIEW

The prediction factors are:

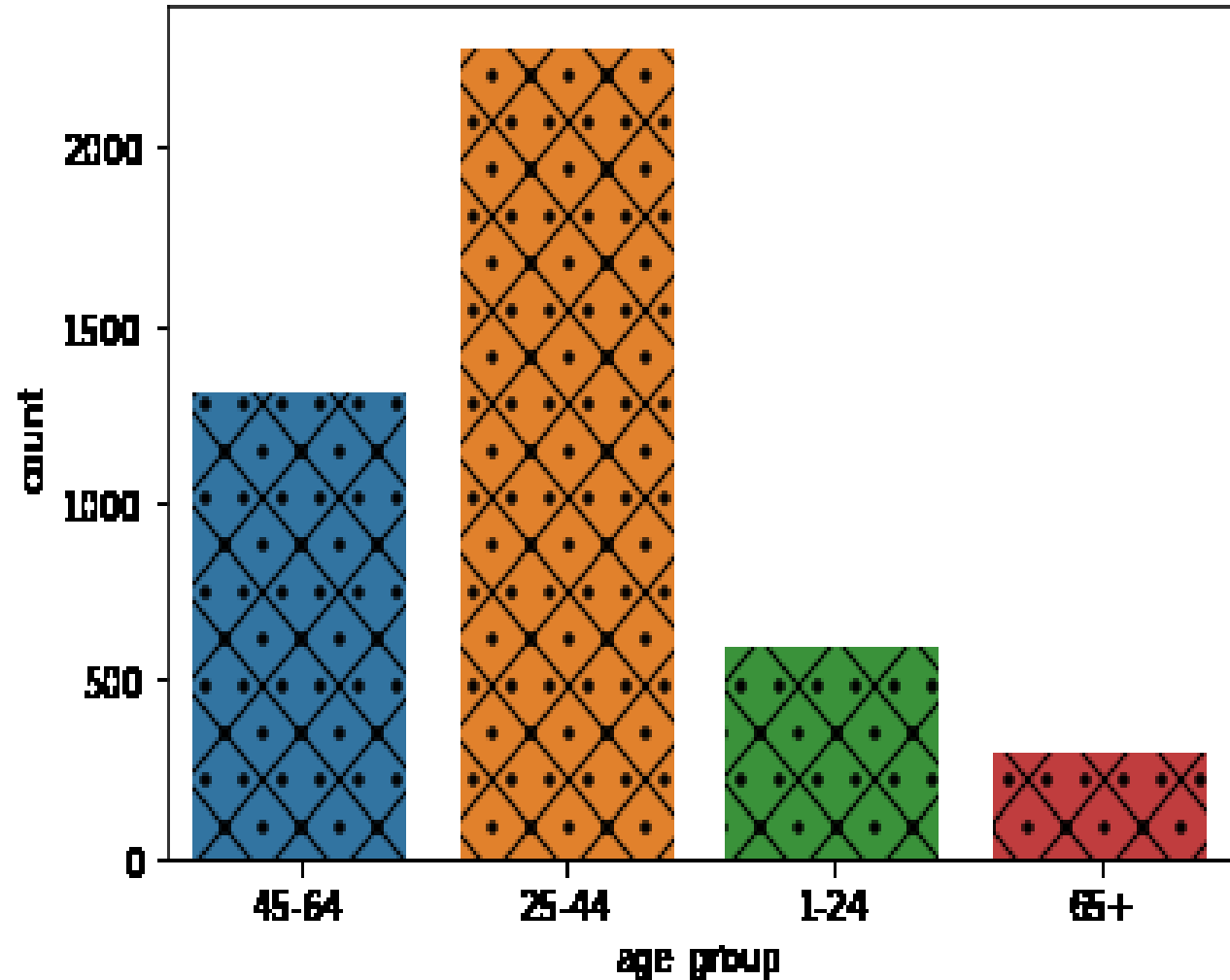
- Tourist age group
- Number of persons travelled with
- Purpose of travel
- Main activity
- Information source
- Tour arrangement mode
- Accommodation
- Food
- Transport
- Insurance packages
- Numbers of nights spent
- Payment mode
- Sightseeing
- Tour guide
- First trip
- Most impressing features.

# UNIVARIATE ANALYSIS

UNIVARIATE ANALYSIS OF SOME IMPORTANT FEATURES

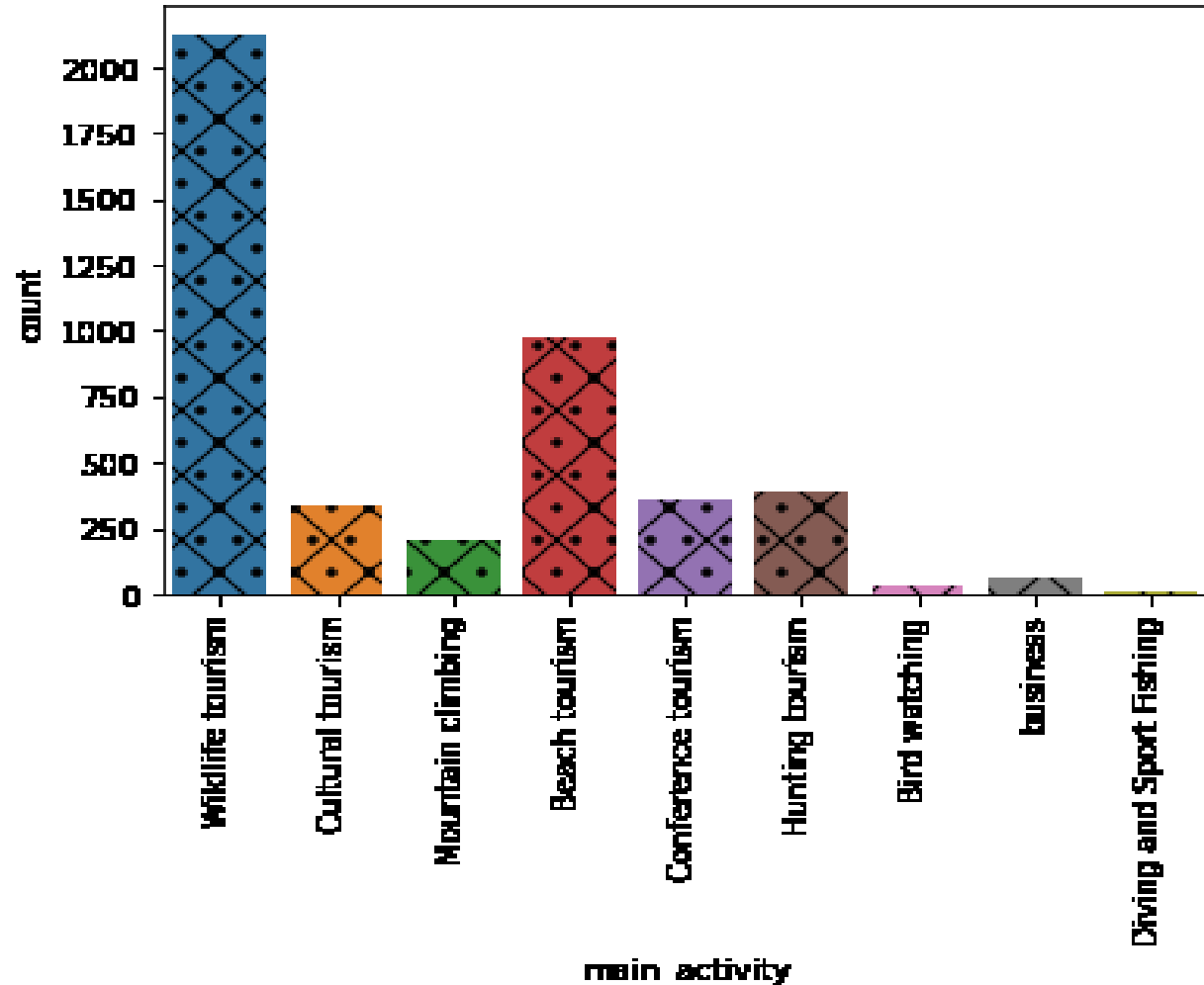
# AGE GROUP FEATURE

The univariate analysis of the AGE GROUP feature shows the highest age group amongst the tourists are people between the age group 25-44 years while the least visiting age group are people 65 years and above. This shows less elderly tourist visit Tanzania.



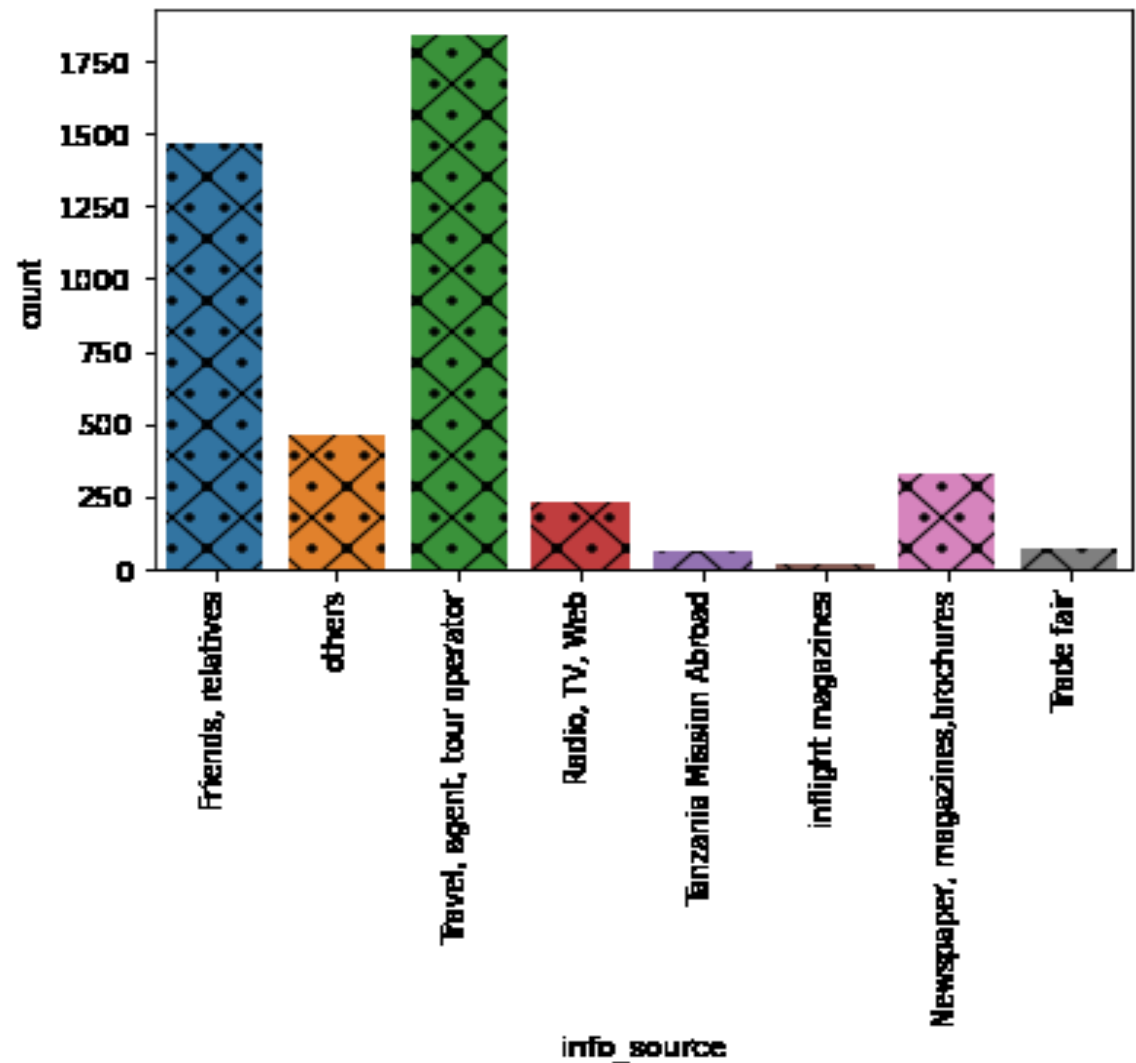
# MAIN ACTIVITY FEATURE

This exploration shows the most explored activity is wildlife tourism, followed by beach tourism. The least explored activities are driving and sport fishing and bird watching.



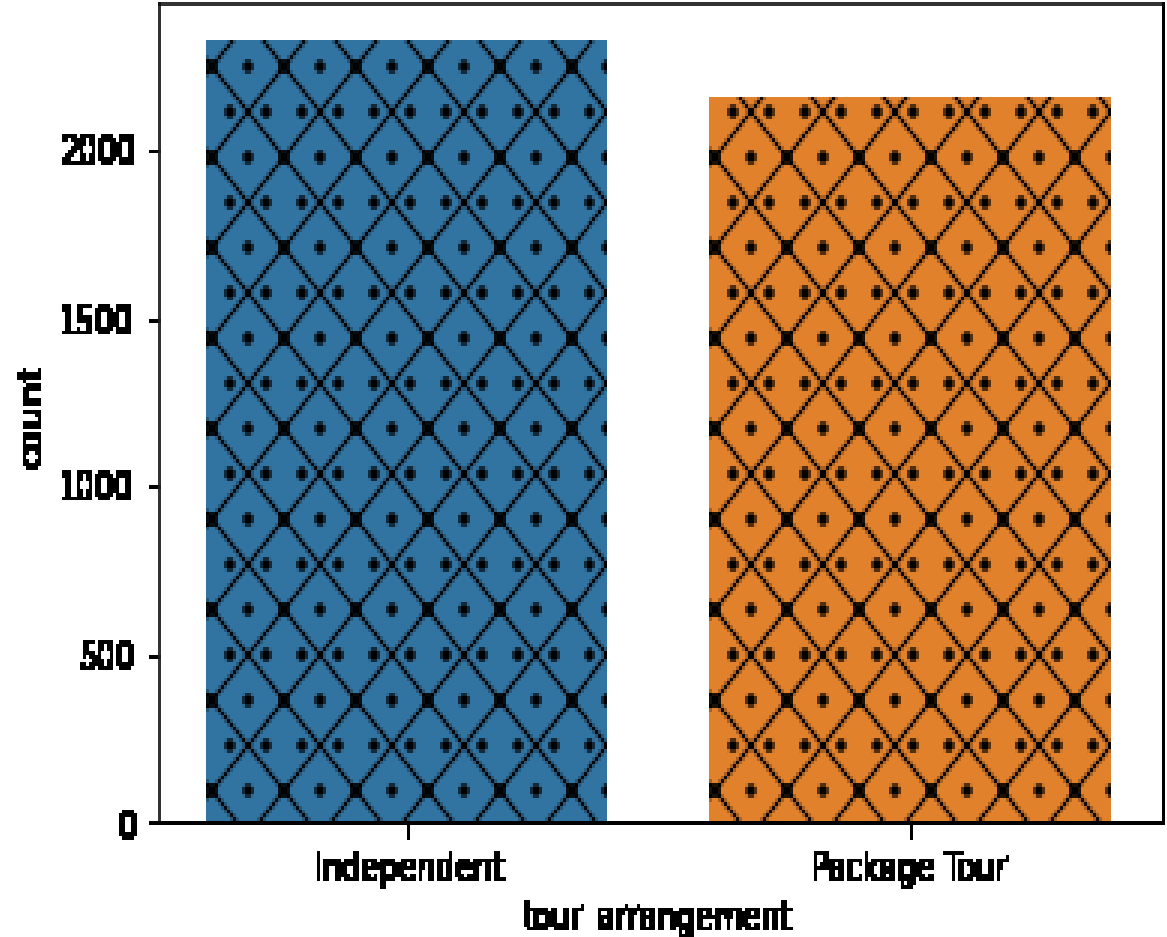
# INFORMATION SOURCE

The highest information source for tourists is travel agent, tour operator, followed by friends and relatives. The least information source is in-flight magazine followed by Tanzania mission abroad.



## TOUR ARRANGEMENT

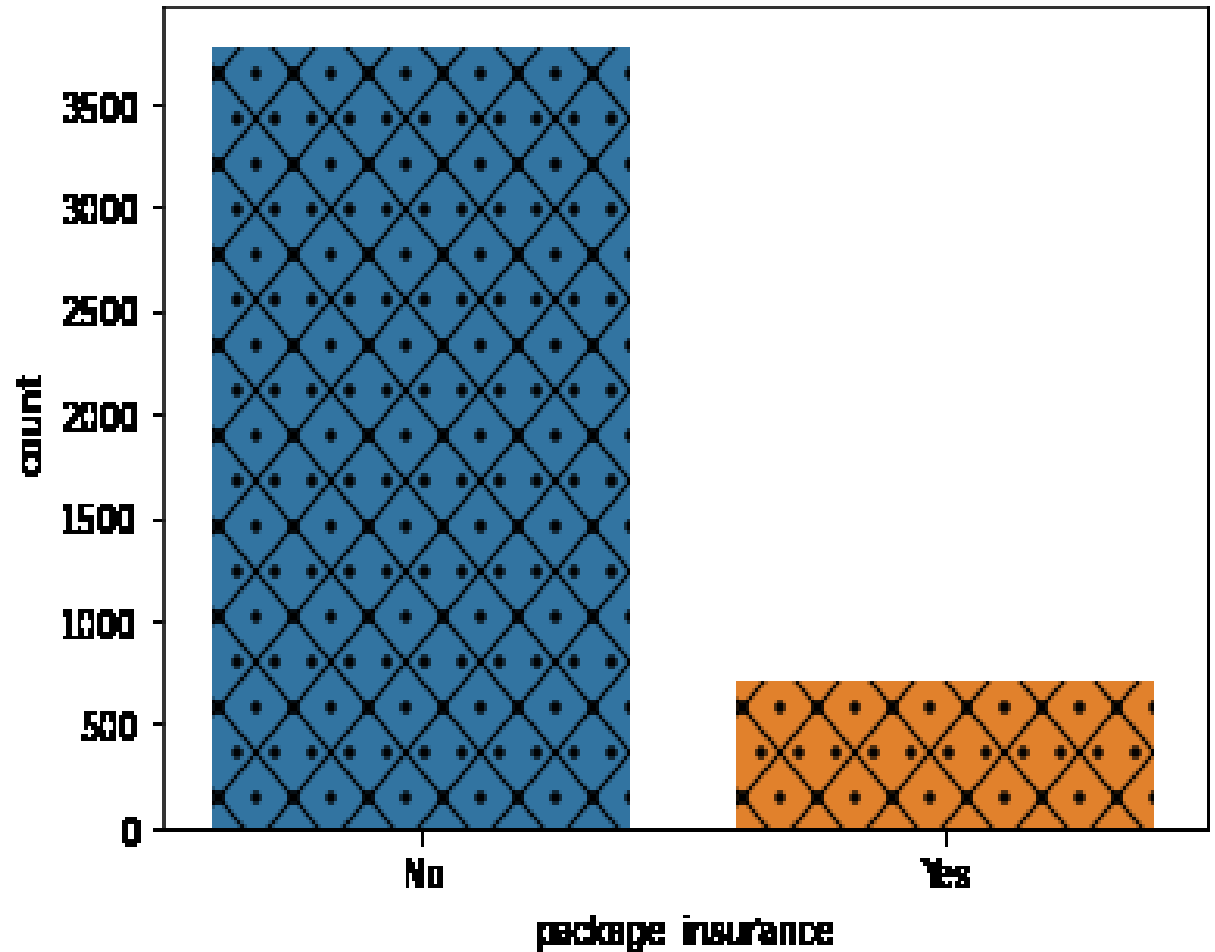
More tourists arrange for their visit independently than using a packaged tour. However, the difference from visualization is not much.





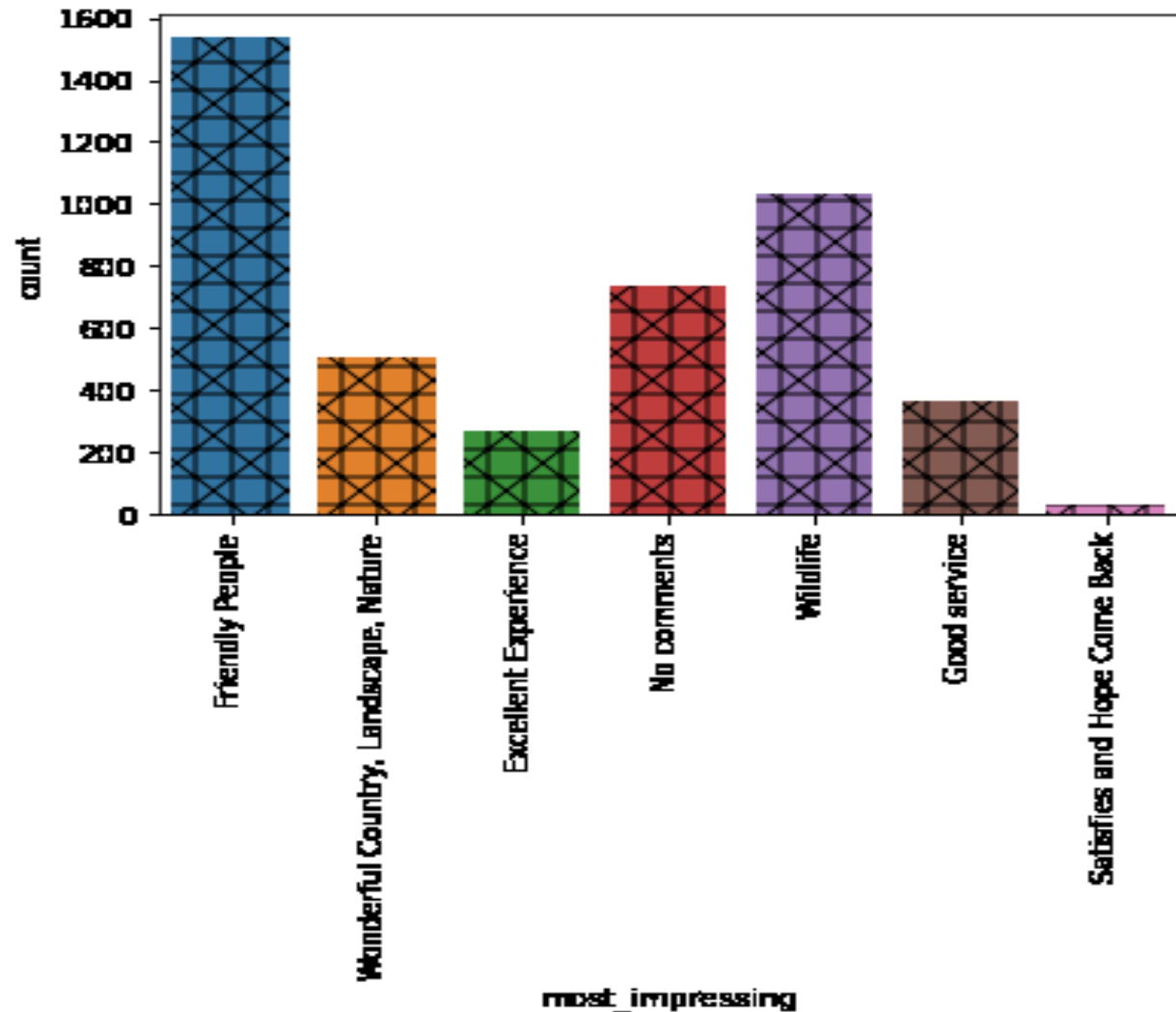
# PACKAGE INSURANCE

Few tourist use package insurance, effort should be made to improve the package insurance deal to make it more attractive to tourists.



# MOST IMPRESSING

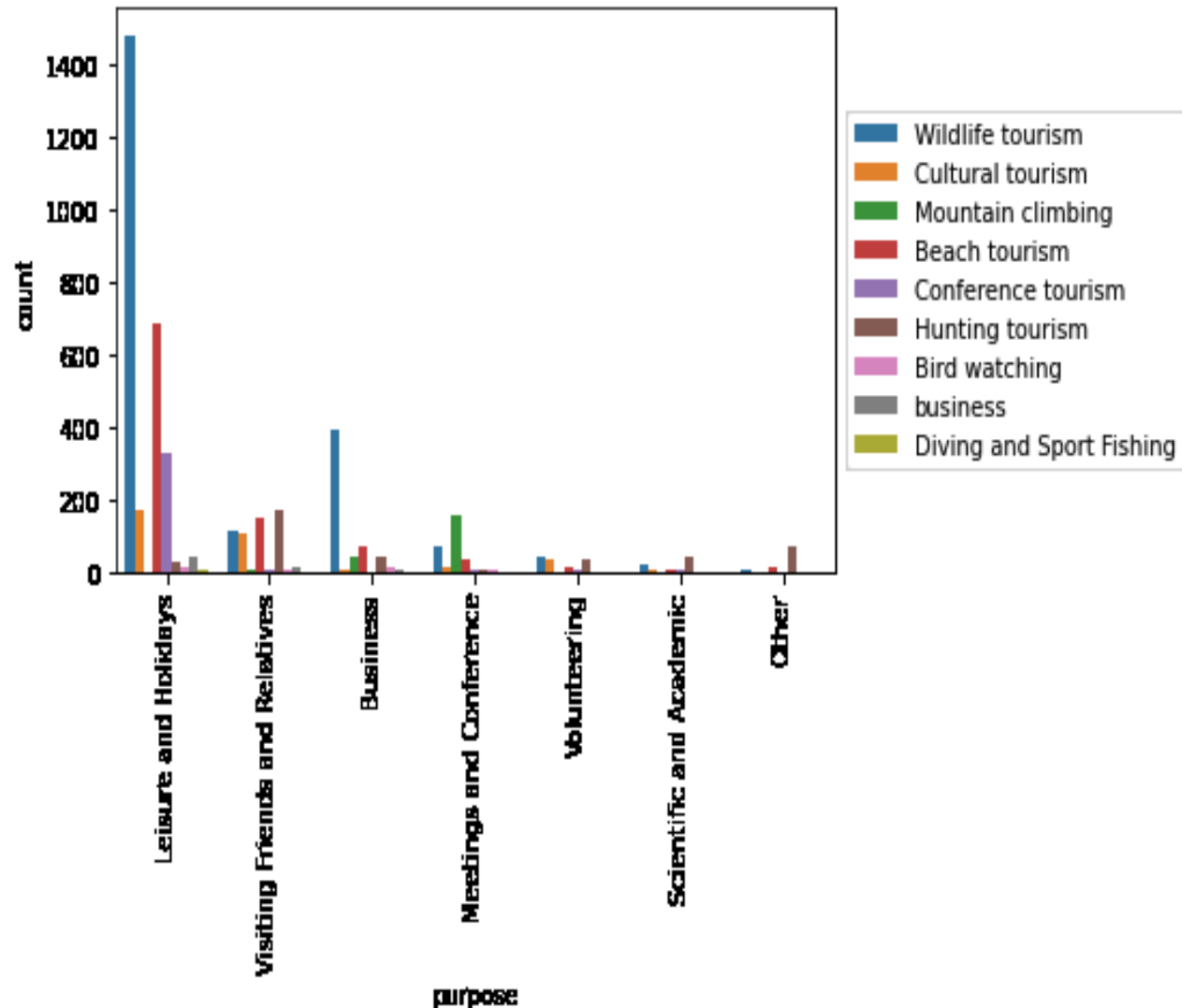
The most impressive feature for tourist is friendly people followed by wildlife, only few tourist hope to come back, attention should be giving to other factors like good service so more tourist can hope to come back.



# BIVARIATE ANALYSIS

# PURPOSE VS NIGHT MAINACTIVITY

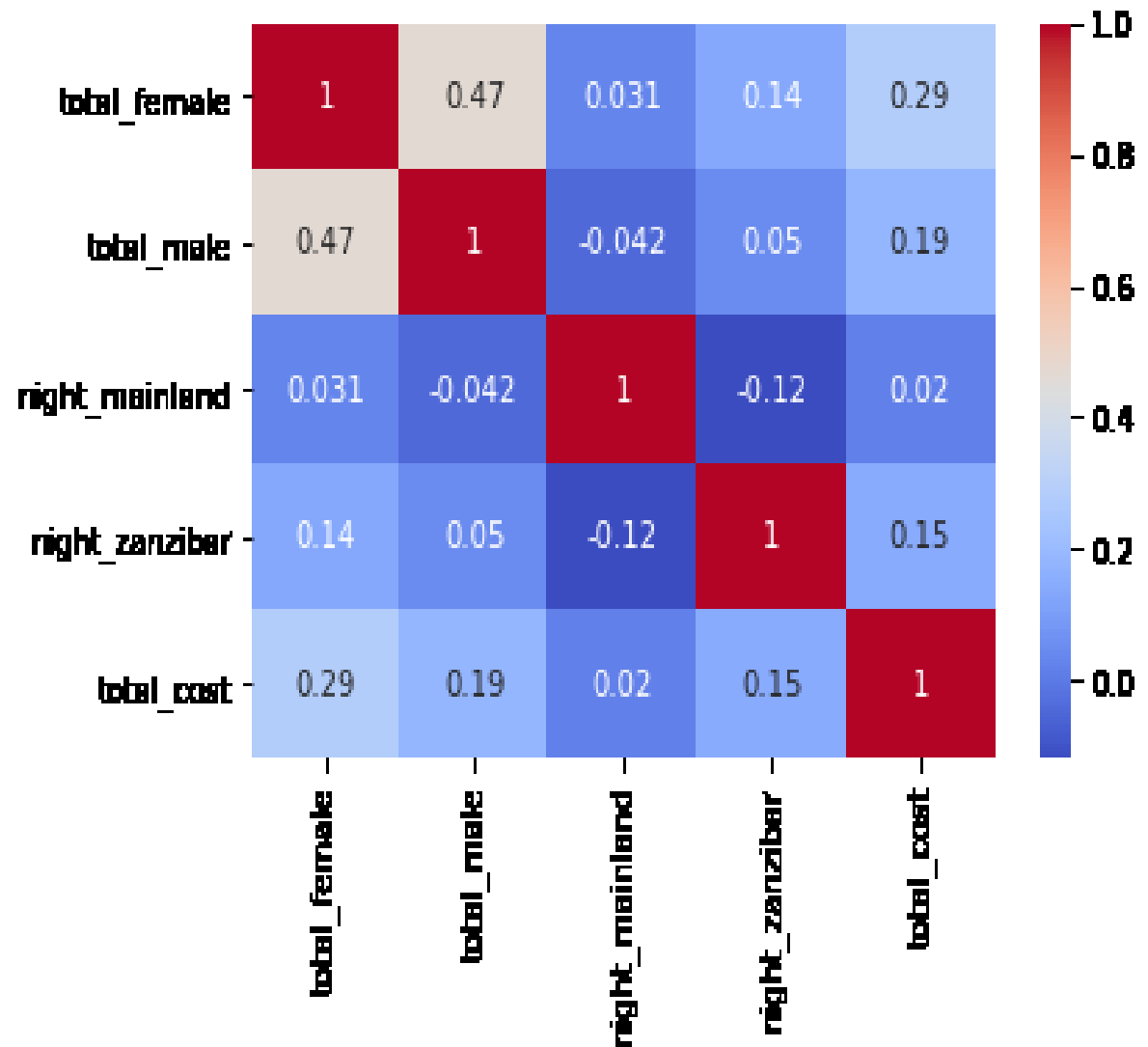
People who came in for holidays and business enjoyed wildlife tourism and beach tourism the most, all group of tourist have potential of exploring the tourism sights. More promo and discounts is recommend for volunteering and academic visitors to encourage their patronage.



# MULTIVARIATE ANALYSIS

# CORRELATION OF ALL NUMERICAL FEATURES

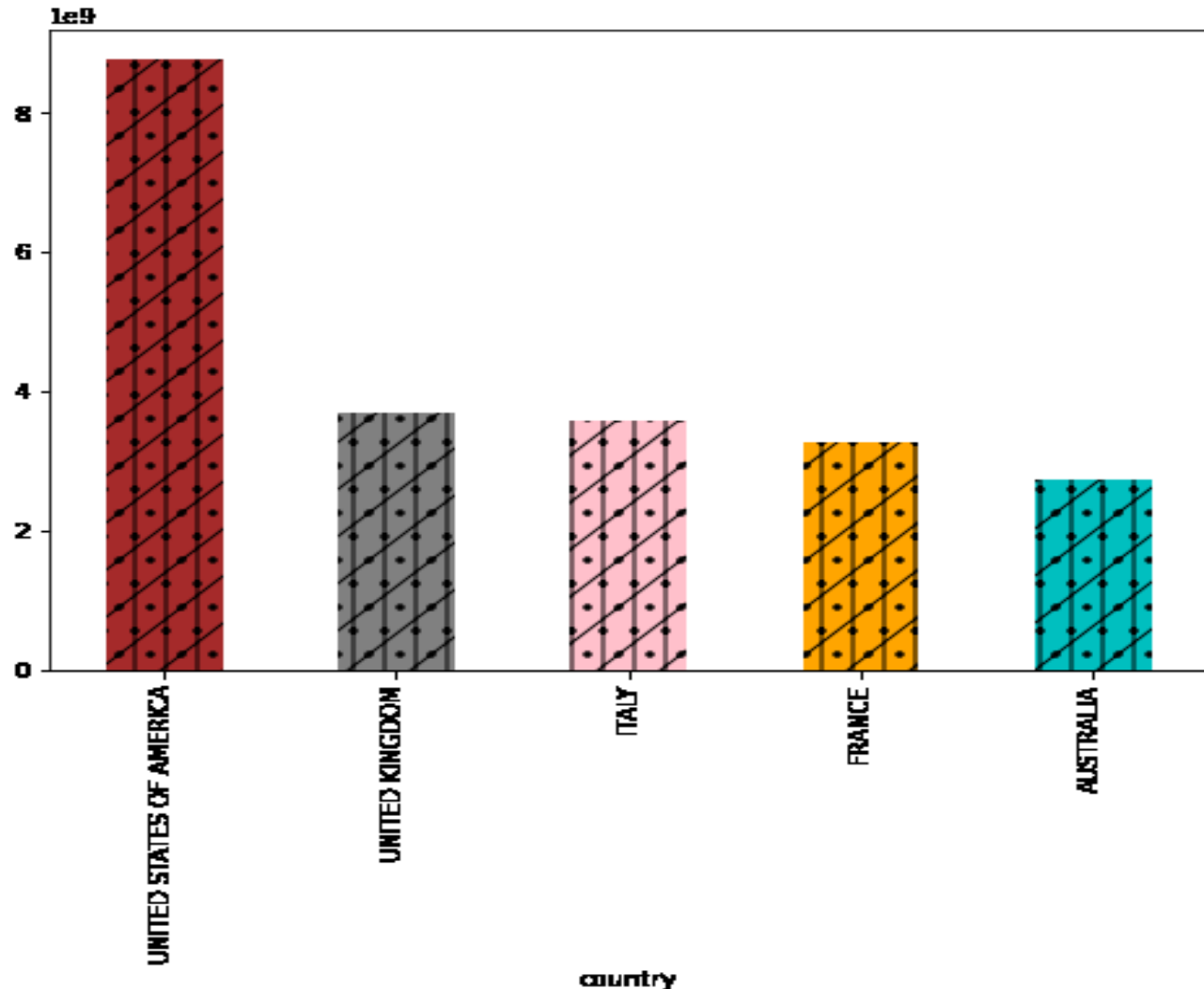
This heat-map shows a stronger correlation between total female and cost than total male and cost, this implies group with more females are prone to spend the more. The correlation co-efficient between total female and the nights spent is higher than the total nights spent by males. A negative correlation between total male and night mainland shows that men are less likely to spend the night on the mainland.



# OBJECTIVE QUESTIONS

## TOP 5 COUNTRY WITH HIGHEST SPENDING STATISTICS

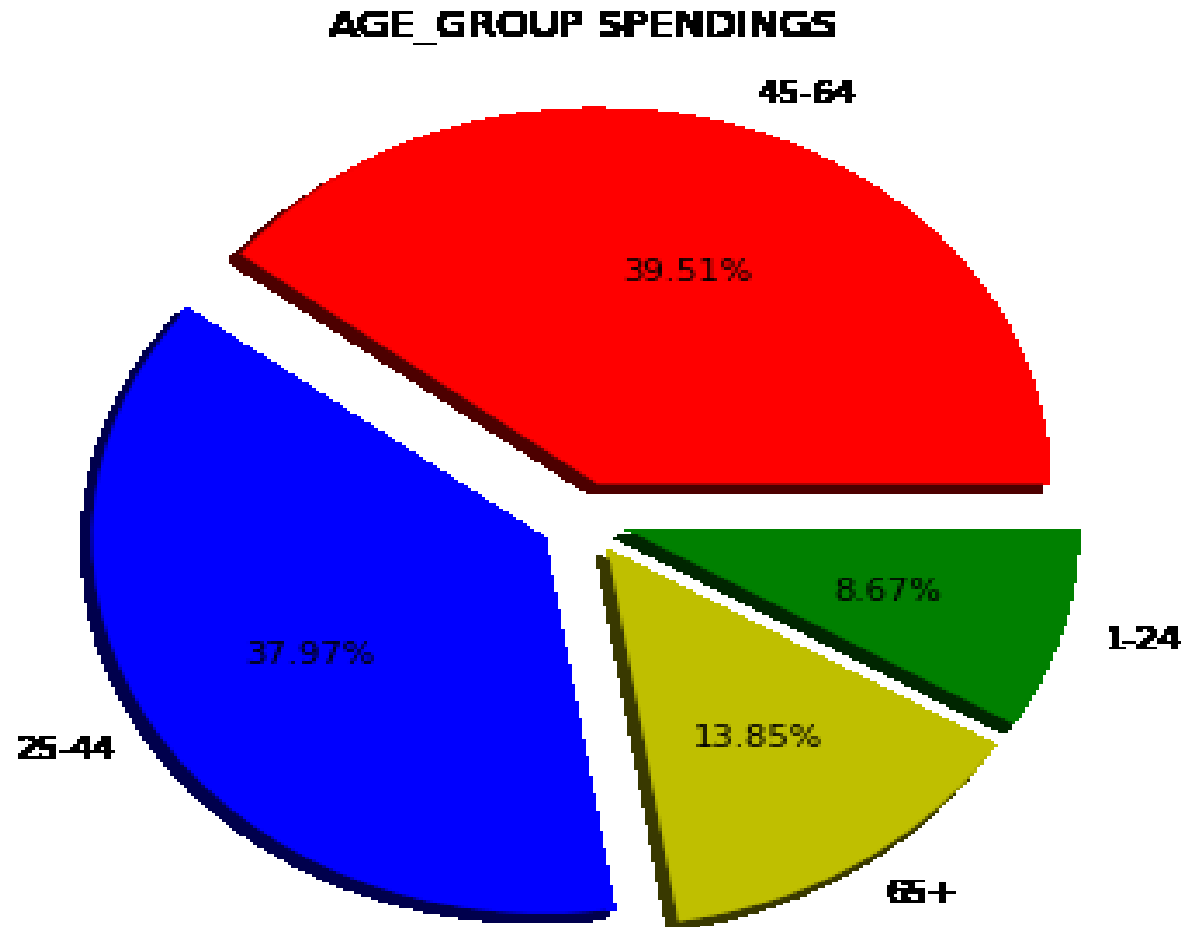
Tourist from USA spent the most money. Tourist from these top 5 highest spending countries should be wooed in the most, using various marketing media, as they are the big spenders and areas of interest to these tourists should be giving more attention in order keep attracting them.





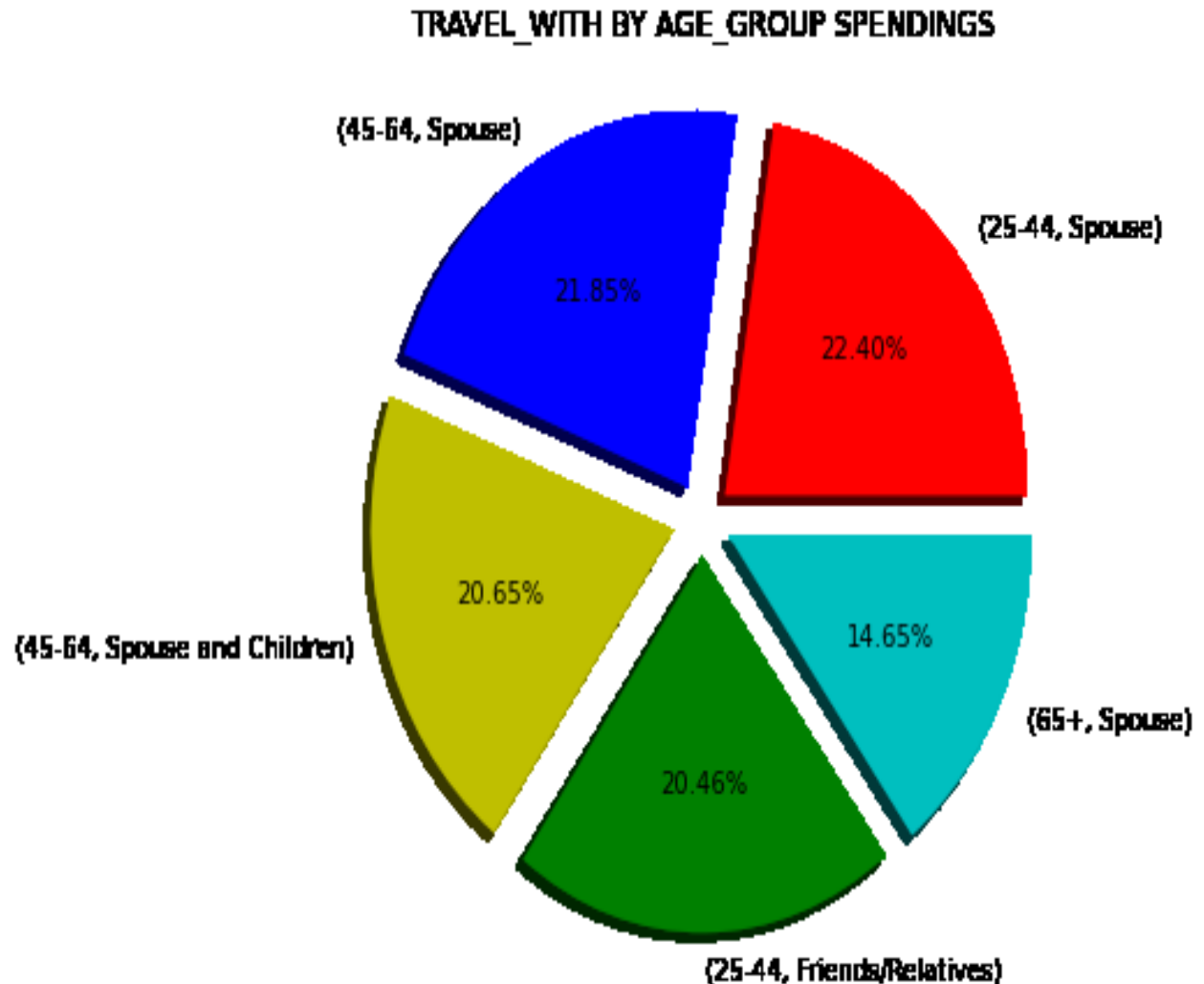
# HIGHEST SPENDING AGE GROUP

Age 45-64 are the highest spending age group, tourist sight that are most impressing to these age group should be improved more. Promo and discounts are recommended for age group 1-24, the most appealing sights to the elderly should also be harnessed.



# TOP SPENDERS BY TRAVEL WITH

Tourist between the age of 25-44 who travel with their spouse spends the most, these age range are young couples, so more lovers and honey moon packages are encouraged.



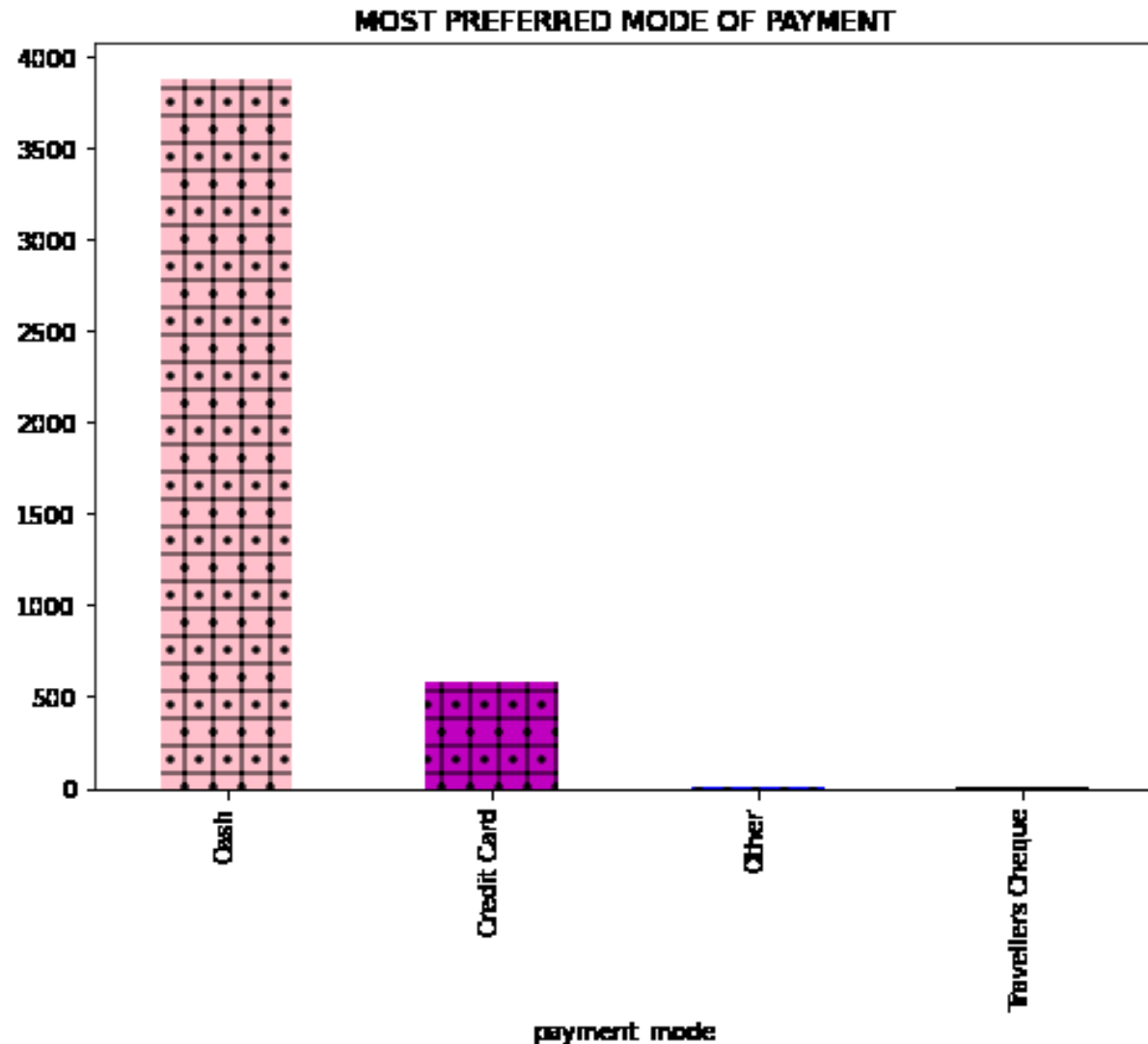
**AVERAGE  
NIGHTS SPENT  
BY TOURIST**

Tourists spends more night's on the mainland than in Zanzibar, the disparity is much. A further survey should be done to access the factors influencing the stay of tourist on the mainland, in order to incorporate the ideas into Zanzibar accommodations

<b>TANZANIA MAINLAND</b>	<b>8.5199</b>
<b>ZANZIBAR</b>	<b>2.3692</b>

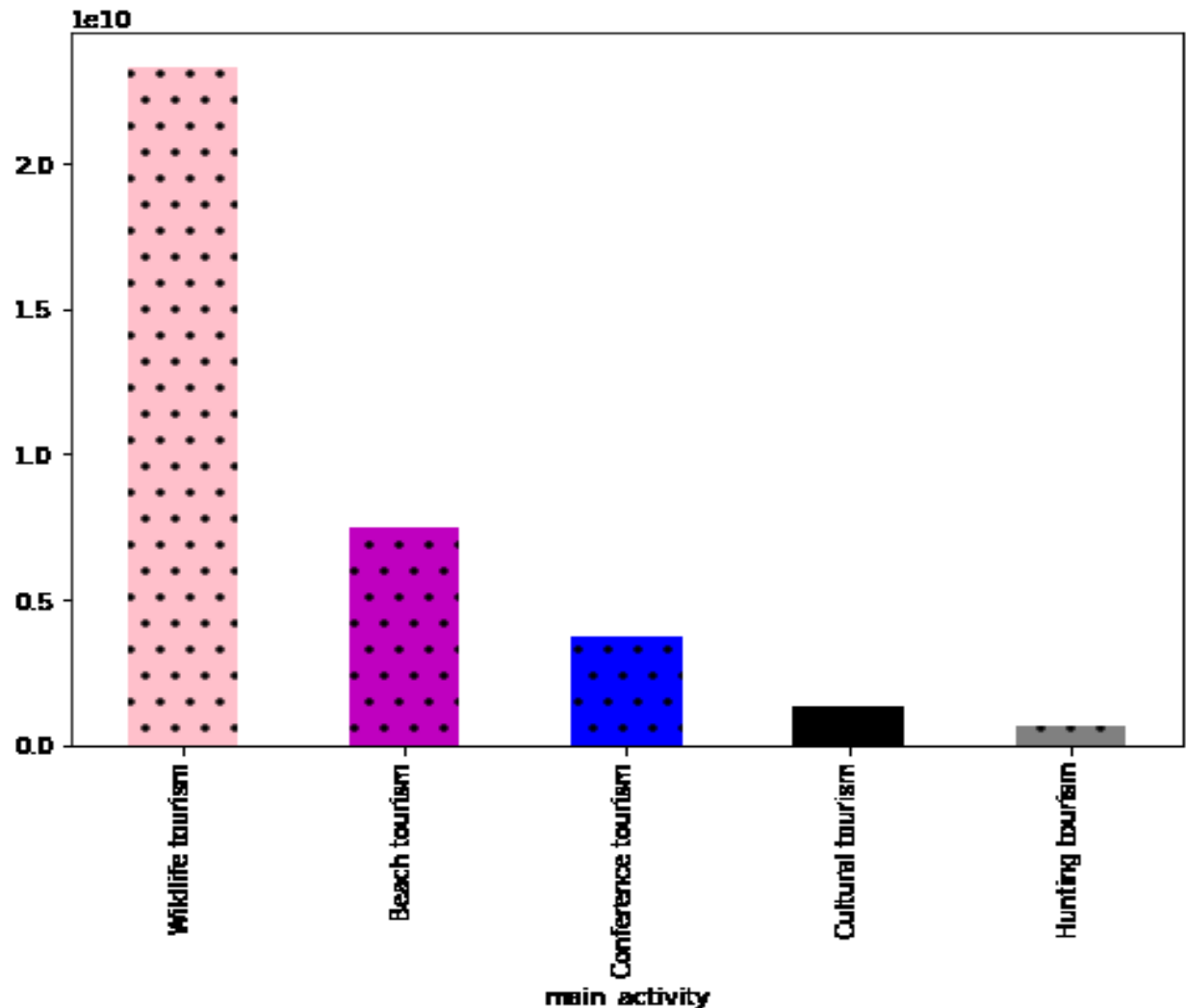
# MOST PREFERRED PAYMENT MODE

The most preferred payment mode by tourists is cash. Hence, the need to work more closely with more bureau the change businesses, to enable easy of changing money for the tourists which contributes to their spending habits. Crypto-currency and cashless payment is recommended to be infused as a payment mode to encourage young tourist to spend more.



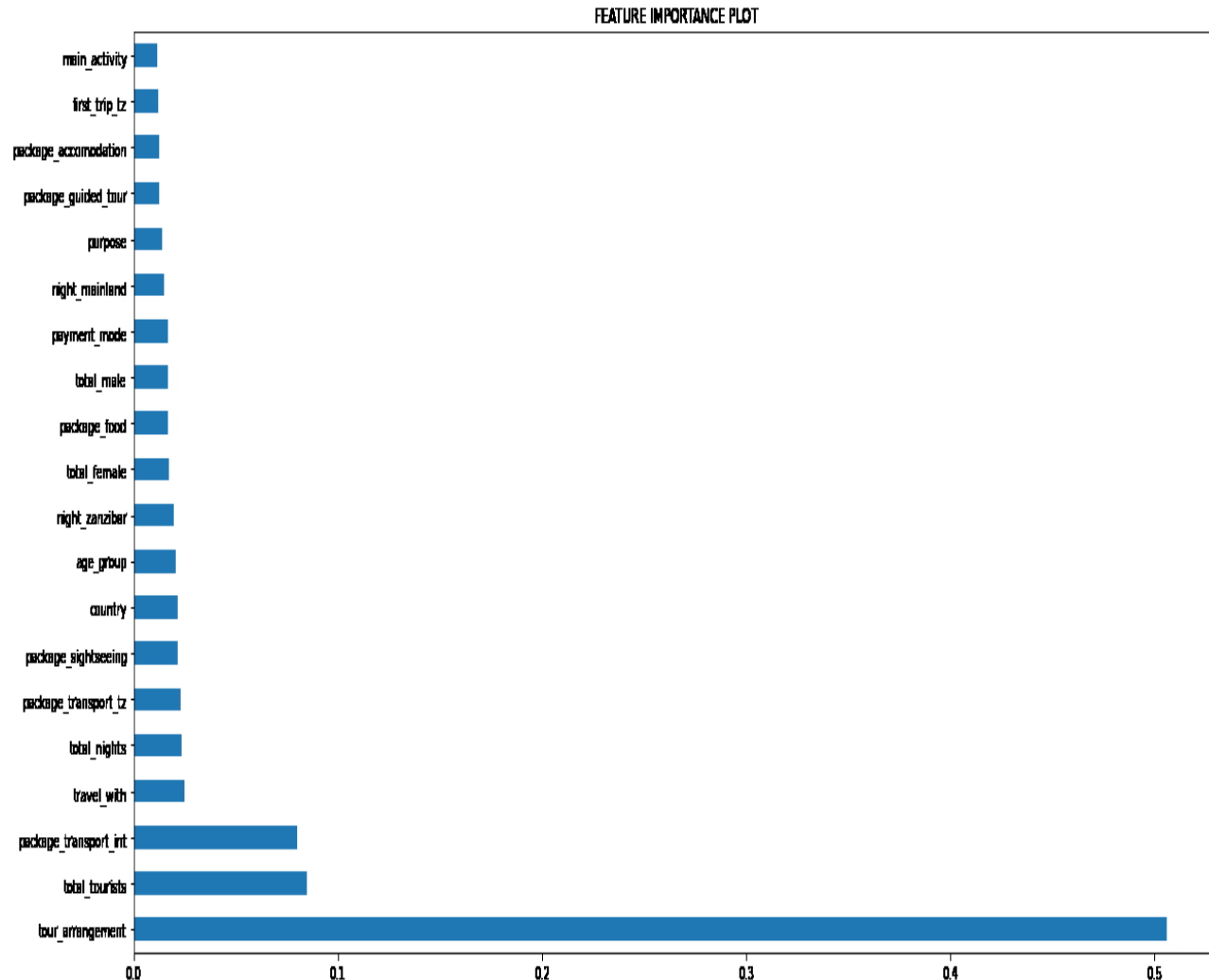
## ASPECTS OF TOURISM WORTH INVESTING ON

The aspect of tourism worth investing in, is wildlife tourism as it has more patronage from tourists. Profits is sure on investment. Hunting tourism is recommended for rejuvenation, more innovations are needed to make it more attractive to tourist. Beach tourism is also a good place to invest.



# FEATURE IMPORTANCE

The feature importance gives us a general overview of the most important features that are vital in predicting the total cost. These features include travel with, package transport international, total tourists, and tour arrangement.



# MODEL OVERVIEW AND PERFORMANCE

- Linear regression model was employed for the prediction of the total cost. The model gave a coefficient of determination score of 0.25 which is low, so we explored other regression models like the XGBoost.
- Model performance of the XGBoost is 0.20 which is lower, this might be as a result of the weak correlation between features. Hence, we suggest other regression models should be explored.

# RECOMMENDATIONS

- Further survey should be carried out on factors influencing the low rate of tourist spending the night in Zanzibar.
- Attention should be given more to advertising on media, exploring social media advertisement is recommended as the world has gone digital.



# RECOMMENDATIONS

- More attention should be given to the number of persons a tourist travel with, package transport international, total tourists and tour arrangement as this a the for cardinal features that can predict a tourist expenditure.
- These factors can also serve as a guide for travel agencies to estimate a tourists possible expenditure in order to prepare them before arrival.

**THANK YOU**

FOR YOUR TIME.