Name: Saher Saeed
Student Number: 23095056
**GitHub Repository: https://github.com/saeedsahar/statistics-and-trends.git**

Dataset Overview

The dataset focuses on smoking habits from the United Kingdom. During the analysis, we will explore various demographics of the data, such as age, gender, income, and marital status, that may contribute to smoking behaviour, as well as examine the relationships between these factors.

Visualisation and Analysis

This pie chart shows the distribution of smokers by gender: **234 females** (55.4%) and **187 males** (44.6%). The larger female segment indicates a higher ratio of smoking among women in the dataset, highlighting important trends for public health initiatives.
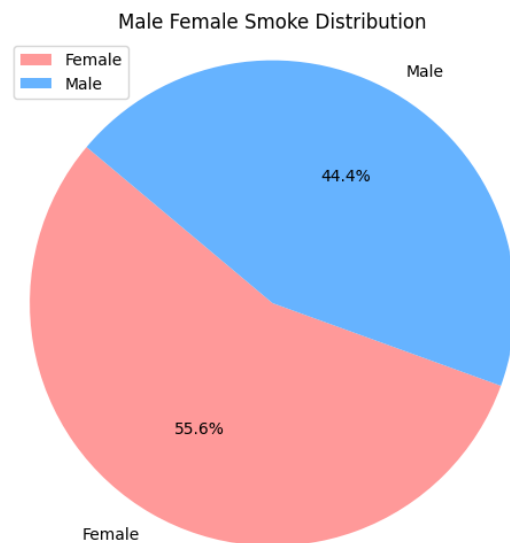

The bar plot illustrates the relationship between smoking habits and educational qualifications. The highest number of smokers, **586**, have **no qualifications**, while **308** have **GCSE/O Levels**, and **262** hold **degrees**. As education increases, the number of smokers decreases, suggesting that higher education may correlate with lower smoking rates.
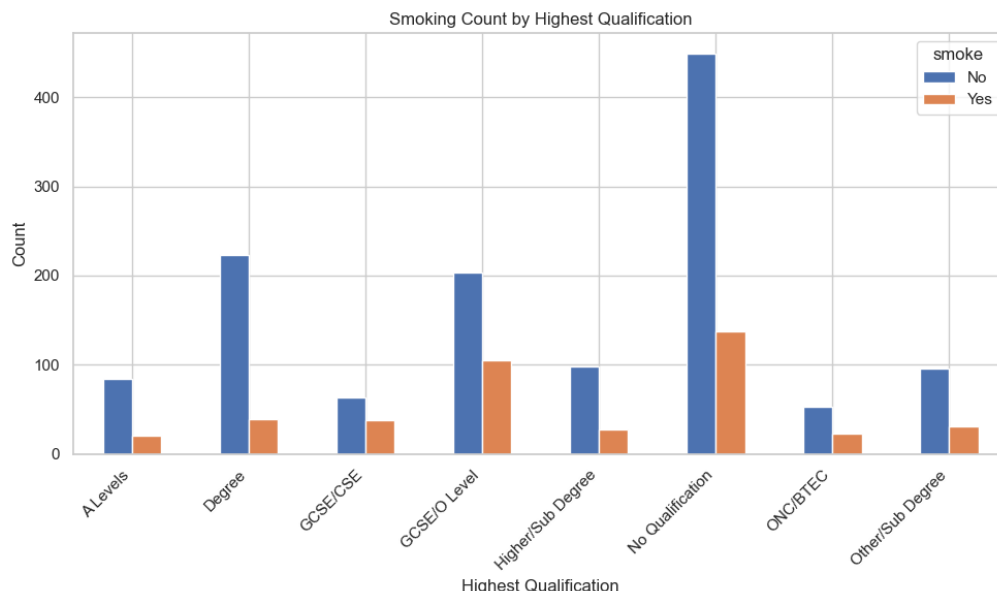
This line chart illustrates the average smoking habits across different age groups and marital statuses. Peaks in smoking averages appear notably among singles and divorced individuals in the **26-35** age range, suggesting a link between smoking behaviour, age, and relationship status.

Average Smoking Amount in a Week by Age Group and Marital Status
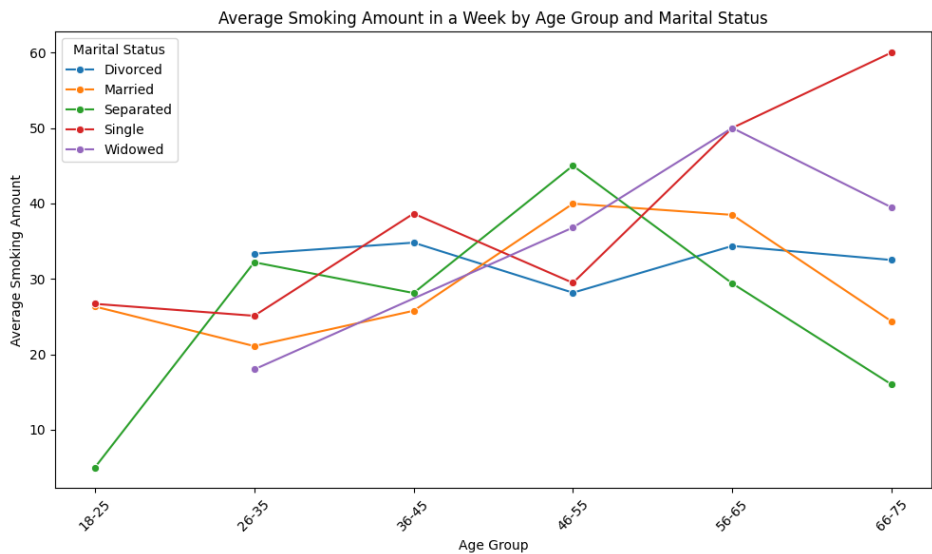
This heatmap provides a quick look at weekly smoking habits based on nationality and gross income. It highlights that **Irish** individuals earning **£2,600 to £5,200** tend to smoke significantly more, suggesting a link between lower income and higher smoking rates. This insight points to the importance of targeted public health initiatives to tackle smoking behaviours in these demographics.

Average Smoking Amount by Nationality and Gross Income
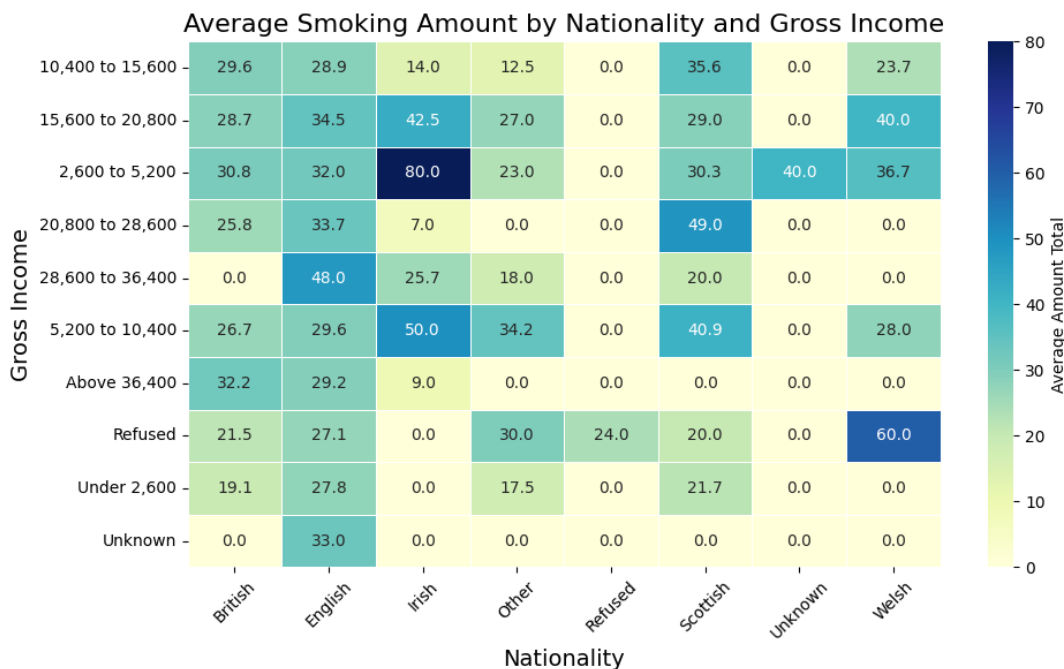
Conclusion:
In summary, this analysis reveals significant insights into smoking habits across the UK. The data indicates that females smoke more than males and that lower educational qualifications correlate with higher smoking rates. The age group of 26-35, particularly among singles and divorced individuals, shows the highest smoking averages. Furthermore, Irish individuals earning between £2,600 to £5,200 demonstrate notably higher smoking rates, highlighting the need for targeted public health interventions. These findings underscore the importance of addressing smoking behaviors in specific demographics to enhance public health strategies.