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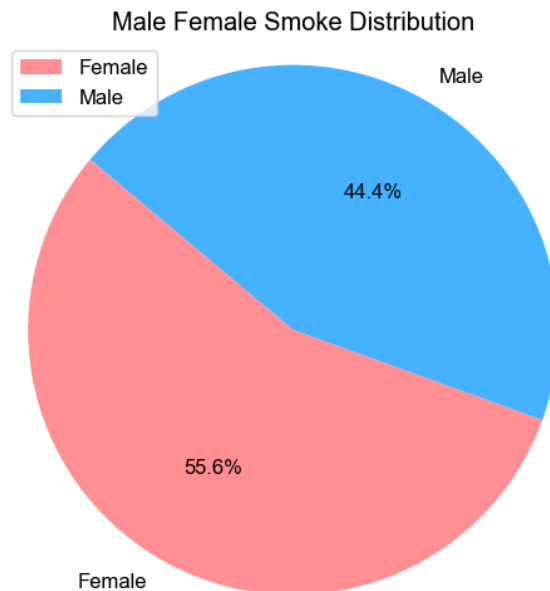
GitHub Repository: <https://github.com/saeedsahar/statistics-and-trends.git>

Dataset Summary

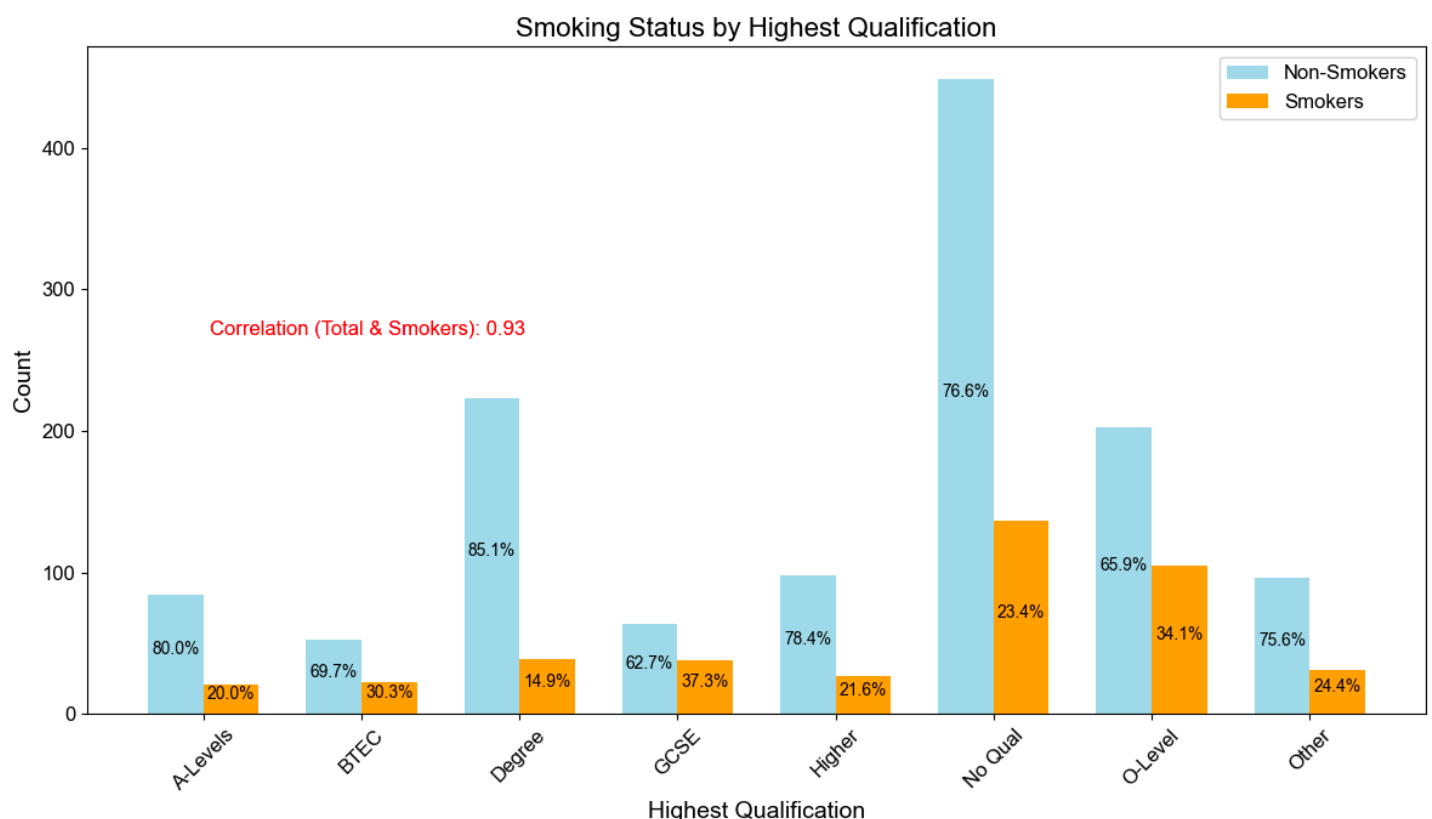
The dataset provides insight into smoking habits in the United Kingdom. While analysing the data we will explore various demographics of the data, such as age, gender, income, and marital status, that may lead to smoking behaviour, as well as inspect the relationships between these factors.

Visualisation and Data Analysis

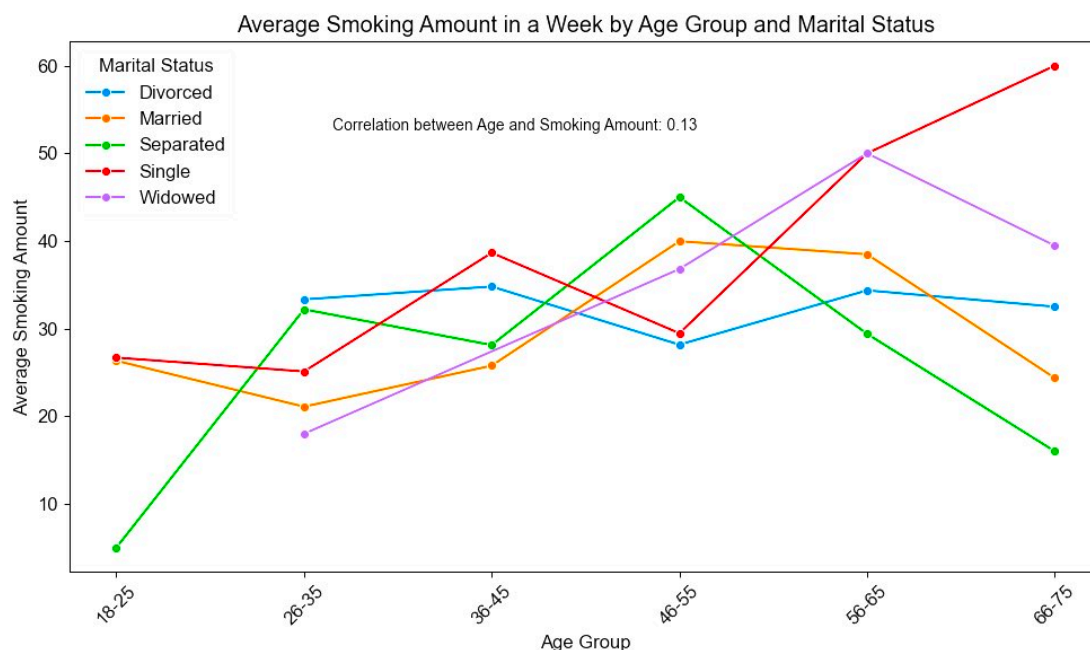
1. This pie chart shows the distribution of smokers by gender: 234 females (55.4%) and 187 males (44.6%). The female segment indicates a higher proportion of smoking among women in the dataset.



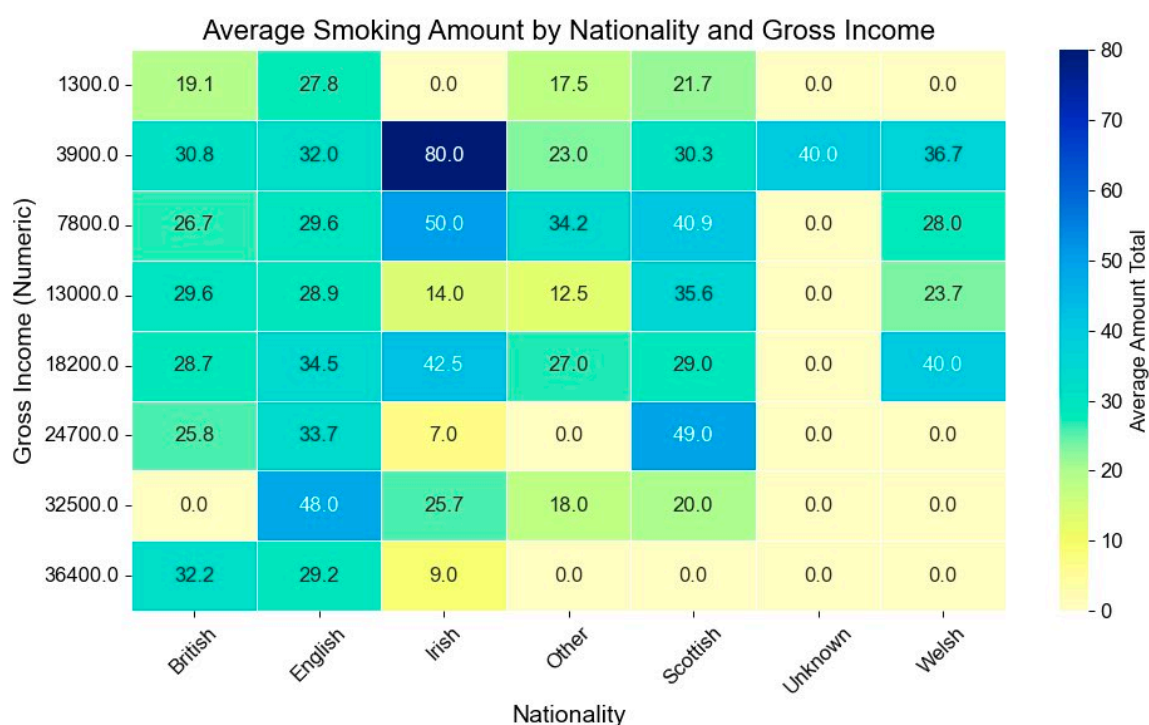
2. The bar chart depicts education versus smoker ratio. Among the GCSE/O Level holders are a lot of smokers, 105, while for A Levels and Degree holders, it is relatively less. All over, there are on average 158.75 non-smokers for every 52.63 smokers. Also, from the higher variance in the case of nonsmokers of 17,672.5 relative to the one of smokers of 1,894.84, it can be deduced that smoking is more consistent among the educational levels, while those that do not smoke are more mixed up. This tends to point to the fact that it may suggest education is a factor in lowered smoking.



- Line chart depicts the average smoking habits of people, differentiated by age group and marital status. Noticeably, smoking peaks among singles and divorced people within the 26-35 age group. It can be noticed that the covariance between age and smoking is positive, which means with the transition of different stages of age, smoking behaviour tends to increase among single or divorced.



- The most striking feature of this heatmap is the negative correlation between income and smoking among the Irish. The highest rate of smoking, 80%, is among those earning from £3,900 to £7,800, while for much higher incomes, such as £36,400, it is considerably less.



Conclusion These findings have some interesting trends in smoking behaviour among different demographic groups.

- Surprisingly, the given dataset shows 55.4% women smoke compared to 44.6% men.
- It points to a general trend observed, that the lower-educated smokers, in particular those who had no qualifications, tend to smoke more.
- It is much more common for unmarried people and divorcees to smoke, particularly those between the ages of 26 and 35 years.
- Irish individuals with incomes between £3,900 and £7,800 are the heaviest smokers. Interestingly, smoking decreases significantly as income rises.

These findings point to health initiatives directed at the lowest income, less qualified, and certain age or marital status groups, having some actual levers in helping reduce smoking rates.