**Professional Certificate in Machine Learning and Artificial Intelligence**

**Module 5 Arturo\_Noguera**

Report for analysis conducted on the provided Dataset

**Section 1**

12684 Customers received on of 5 different types of coupons.

A close-up of a white background

Description automatically generated

Customers proportion accepting the received coupon is 61.71 %

The breakdown for customer receiving a specific coupon type and their corresponding acceptance is depicted below.

A graph of a bar graph

Description automatically generated

**Section 2**

2017 customers got the Bar coupon

Out of these only 827 (41%) accepted the coupon

From customers that received the Bar coupon, those who go to bar more than 3 times a month, have an acceptance ratio (accepted/not accepted) equals to 3.3 while customers going to a bar 3 or fewer times a month. have an acceptance ratio equals to 1.1.

That is frequent bar customers, have an acceptance ratio 3 times higher than infrequent customers.

Customers over 25 who go to bar more than once a month have an acceptance ratio equals to 2.28, while the rest of the customers having the bar coupon have an acceptance ratio equals to 0.50.

That is frequent customers over 25, have an acceptance ratio 4.5 times higher than the rest of the customers.

drivers who go to bars more than once a month and had passengers that were not a kid and had occupations other than farming, fishing, or forestry have an acceptance ratio equals around 2.5,

that is more than 70% of these customers accept the coupon.

The sane acceptance ratio (2.5) shows up for customers that go to bars more than once a month, had passengers that were not a kid, and were not widowed.

For customers that go to bars more than once a month and are under the age of 30 ,the acceptance ratio is 2.59

On the other side , customers that got the bar coupon and go to cheap restaurants more than 4 times a month and income is less than 50K, are less likely to accept the coupon, their acceptance ratio us 0.83,

**Section 3**

3996 customers got theCoffeHouse coupon

49.925 percent of CoffeHouse coupons were acepted

Customers going to the coffee shop frequently have a 2:1 acceptance ratio, however customers attending less than once a month or never have the lowest acceptance ratio (1:1 and 1:4 respectively.)

The weather has not direct impact on the acceptance ratio, however the coupons are sent mostly in sunny weather

The occupation feature for the top frequencies "Student" and "Unemployed" are 1.7 and 1.1 respectively.

Travel direction has no huge impact on the acceptance rate

Acceptance ratio for each age group remains close to the media (1:1)for most groups, except the two outliers (below21 with 2.3 and 50plus with 0.72)