## Introduction

I work in the area of Road Safety and my organisation is responsible for testing specimens from drivers taken under the Road Traffic Acts for alcohol and drugs. We are responsible for Evidential Breath Alcohol Testing instruments that are located in particular Garda Stations throughout the country. While drug use among the general population is increasing at an exponential rate and this is reflected in drivers, I have a particular interest in Alcohol use in drivers.

When drivers are arrested by An Garda Siochana on suspicion of driving under the influence of an intoxicant or after being involved in an incident, there are several option available. In cases where alcohol is suspected the Garda can bring he driver to a garda station with an EBT instrument and require a that they provide two breath specimen to the instrument or they can call a doctor who will facilitate the provision of a urine or blood specimen. Drivers suspected of drink driving are preferentially brought to EBT instruments. The data from the instruments is a very good reflection of

There are 86 instruments nationwide each of which log each test carried out. Scientists from the MBRS laboratory attend the instruments on a six month basis to ensure that they are measuring alcohol accurately. Within each test cycle there are two alcohol standards presented to the instrument. These are called simulator one and simulator 2. Simulator one has a nominal value of 9ug/100ml and simulator 2 has a nominal value of 22ug/100ml.

Each driver is asked to provide two breath specimens, the law dictates that the lower of the two specimens will be taken into account. To account for uncertainty of measurement a deduction of 17.5% is taken from the lower of the two results and this value is the reported result used to determine if an offense has occurred.

The data is downloaded from each instrument by the scientists and a combined excel sheet is available for each year.

## Method

The MBRS has a local Area Network which holds all data related to intoxicated driving. I accessed the data related to EBT 2019 and EBT 2020 which was in an excel file. Prior to removing the data from the LAN I removed columns which could identify any individual driver or incident.

I imported the

import pandas as pd

import matplotlib.pyplot as plt

import seaborn as sns

import numpy as np

import calendar

hel = pd.read\_excel('2019 EBT.xlsx')

print(hel.head())

hel['Day']=hel['Date'].dt.weekday

print(hel.head())

hel['Month']=hel['Date'].dt.month

print(hel.head())

hel.sort\_values(by=['Location2','Status'],inplace=True)

print(hel.loc[hel['location2']== 'Co.Wicklow'])

## Insights

The number of Males that are detected driving under the influence greatly surpasses the level of females. What we cannot tell from this is this level a true reflection of the male /female ratio of drink drivers or merely a reflection of a subconscious bias applied to arrest.

Chart, histogram

Description automatically generated

Chart, scatter chart

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