# IS THE UK POLICE BIASED?

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***Abstract*— The objective of this report is to see how the UK police are discriminated against a specific race, which including black or Asian people. The thesis used Anaconda navigator to perform data visualisation, which has been accomplished by first creating a data frame and then examining it and t he study concludes that the police in the United Kingdom are not biased against any ethnic community.**

***Index Terms*—UK Police, Self defined ethnicity,data visualization, data frame,predictive analysis, outcome.**

## I. INTRODUCTION

The emphasis of this research is on the UK government's biases in the field. This raises an ethical issue for the UK police. Python software is used to generate analytic results in this analysis. One of the factors in this analysis is the skin complexion of black and white people. This re-examination will show whether or not UK police data collection is bias. This section covers the current situation, the protocol that was introduced, methodological part, the discussion, and the results. It is said that the UK police are bias because they support a specific set of values. Despite the fact that the entire department is responsible for this right to excuse, the entire department must be visible. We must first uphold equality in society, including economic, political, and other aspects, in order to articulate the ethical reality. There is no space for extremely valuable bits of society. This study will use data from the Jupiter platform to conduct this analysis. You must always follow UK constitution law to maintain a strong ethical climate. This analysis would be helpful to this particular study in this case.

## II. FRAMEWORK

This study describes the ethical overview this research describes Britain's police responsibility.Some violence factor is mentioned, meaning black colour through the colour bases.keeping more concentration on the and providing the minimum needs to the people, how did the united kingdom police showed there fairness. All these were explained in this research by using the python software.All in the health-care industry aspires to have a high bed acceptability rate. Health treatment, as well as prescription selection, remains a concern for ordinary people. If the incident becomes aggressive, the police may assume responsibility. The above issues must be addressed in this report, which will use data from black and white sunken people. This research will be particularly useful because there aren't enough beds on the market right now. Hospital beds are in short supply. Strong ethical police also uphold the UK government's clause in the constitution, as well as its rationality.According to the study, you must remember the crucial period, which is COVID-19. Any police force, in terms of ethics, is the primary body in charge of maintaining law and order in a given country. It must, in reality, uphold its own laws and order, without favouring or assisting the health, education, food, or public policy sectors. As a result, in the ecosystem, a free economic, social, and political climate is created in order for people to live normal lives and for government to play an equal role.

## III. METHODS USED IN THE RESEARCH

In order to conduct research analysis, draw conclusions and develop future data models, data collection may be defined as the process for collection and measurement of data.

Future data from similar data sets can then be predicted by using the study findings. The research findings can also be used to train artificial intelligence and are used in a wide range of areas of research and development.. A few examples of data collection results include machine training, deep study, predictive analysis, and enhanced learning. Two primary and secondary data collection methods are used for data collection.

### *A. Primary data collection method is of five steps:-*

- Direct Personal Interviews
- Indirect Personal Interviews
- Collection Through Questionnaires
- Collection Through Enumerators
- Collection Through Local Sources

### *B. secondary data collection method :-*

It is the data that has been downloaded from the (https://data.police.uk/data/) which has be with the researcher. for this data only they have performed to get the outcome of the United kingdom police investigation.

## IV. PREDICTIVE ANALYTICS AND DATA VISUALIZATION

Data, statistical algorithms, and machine learning techniques are used in predictive analytics to determine the probability of potential outcomes based on historical data. The aim is to have the best assessment of what will happen in the future, rather than simply understanding what has happened. so predictive analysis is used to get the outcome of the uk police investigation. whether they have been rude to certain ethnic group like black and Asian. by using this methods their is good benefit that any question can be answered with proof and it mainly based on the data what we provide exactly.

### A. *Data visualization*

As the process of the Data visualization is depended on the independent and dependent variable. In this self defined and ethnicity and officer defined ethnicity are the independent variable which means they are not depended on any other. where as the remaining in the table are the depended on the independent variable if the independent variable changes the outcome will also changes.

### B. *Things did to get the outcome*

first was the downloading of the data set from the uk police website by applying the filters to get the stop and search files. so the by using anaconda navigator lunched the jupyterlab applied the predictive analysis and done all the research things.

## V. OUT-COME

by applying the predictive analysis on the data set downloaded from the uk police website it has segregated the rows and columns. in that it has displayed the various types of crimes and the ethnic group of the police officer. for the first code operation the outcome is **type, date, gender, Age-range, Self defined ethnicity, Officer defined ethnicity, Legislation, object of search, Latitude, Longitude, outcome, outcome lined to the object**. Will elaborate the following in detail.

### A. *data in the sheet:-*

- **type**:- its the type of investigation done by the uk police
- **date**:- on which day they started the search
- **gender**:- whether the suspect is female or male
- **Age-range**:- age of the suspect
- **Self defined ethnicity**:- Ethnicity refers to a person's classification based on the features of a group of people. This the first independent variable in the data set. which defines the outcome.
- **Officer defined ethnicity**:- The ethnicity defined by the investigators in the investigation process for the suspect. This is the second independent analytical variable.
- **Legislation**:- under which act they have arrested.
- **object of search**:- offence committed by the suspect.
- **latitude**:- location(maps) points
- **outcome**:- The action taken by the police after the investigation was conducted. This is the variable dependent which determines the prediction.
- **Outcome linked to object of search**:- any weapons that has been collected by the police from the suspect.

## VI. PROCESS

From this will be adding all the figures and the code operation done for the research.

importing the os os. system() function executes a command, prints any output of the command to the console, and returns the exit code of the command.

the glob module is used to retrieve files/pathnames matching a specified pattern.

```
#importing the os os. system() function executes a command, prints any output
#of the command to the console, and returns the exit code of the command.
import os

#the glob module is used to retrieve files/pathnames matching a specified pattern.
import glob

# Simply imports the library the current namespace, but rather than using the name pandas ,
#it's instructed to use the name pd instead.
import pandas as pd

# get data file names by using the above
path =r'C:\Users\HP\Documents\888-2_29April\UK_POLIS\2020-06'
filenames = glob.glob(path + "/*.csv")
```

```
#Deep first search for tree traversal on graph or tree data structures.
dfs = []
for filename in filenames:
    dfs.append(pd.read_csv(filename))
```

Fig. 1. path of the csv file and creation of python(source:- self)

Simply imports the library the current namespace, but rather than using the name pandas , it's instructed to use the name pd instead.

**A csv file was created and a data frame was created using the following code**

```
#Deep first search for tree traversal on graph or tree data structures.
dfs = []
for filename in filenames:
    dfs.append(pd.read_csv(filename))
```

```
#result for the first search
dfs
```

Fig. 2. **Data frame creation**(source:- self)

**first data frame**

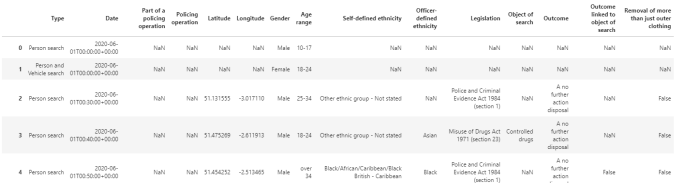
```
[                       Type                        Date  \
0              Person search  2020-06-01T00:00:00+00:00
1    Person and Vehicle search  2020-06-01T00:00:00+00:00
2              Person search  2020-06-01T00:30:00+00:00
3              Person search  2020-06-01T00:40:00+00:00
4              Person search  2020-06-01T00:50:00+00:00
..                       ...                        ...
950            Person search  2020-06-30T20:25:00+00:00
951            Person search  2020-06-30T20:30:00+00:00
952            Person search  2020-06-30T20:39:00+00:00
953            Person search  2020-06-30T21:55:00+00:00
954            Person search  2020-06-30T21:55:00+00:00

     Part of a policing operation  Policing operation   Latitude  Longitude  \
0                             NaN                  NaN        NaN        NaN
1                             NaN                  NaN        NaN        NaN
2                             NaN                  NaN  51.131555  -3.017110
3                             NaN                  NaN  51.475269  -2.611913
4                             NaN                  NaN  51.454252  -2.513465
..                            ...                  ...        ...        ...
950                           NaN                  NaN  51.457799  -2.578043
951                           NaN                  NaN  51.457799  -2.578043
952                           NaN                  NaN  51.459207  -2.578953
953                           NaN                  NaN  50.942359  -2.625142
954                           NaN                  NaN  50.942359  -2.625142

     Gender Age range                          Self-defined ethnicity  \
```

Fig. 3. **first data frame**(source:- self)

**last data frame creation**

```
#last data frame set creation
big_frame = pd.concat(dfs, ignore_index=True)
dfs = pd.DataFrame(big_frame)
```

Fig. 4. **last data frame creation**(source:- self)



| | Type | Date | Part of a policing operation | Policing operation | Latitude | Longitude | Gender | Age range | Self-defined ethnicity | Officer-defined ethnicity | Legislation | Object of search | Outcome | Outcome linked to object of search | Removal of more than just outer clothing |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | Person search | 2020-06-01T00:00:00+00:00 | NaN | NaN | NaN | NaN | Male | 10-17 | NaN | NaN | NaN | NaN | NaN | NaN | NaN |
| 1 | Person and Vehicle search | 2020-06-01T00:00:00+00:00 | NaN | NaN | NaN | NaN | Female | 18-24 | NaN | NaN | NaN | NaN | NaN | NaN | NaN |
| 2 | Person search | 2020-06-01T00:30:00+00:00 | NaN | NaN | 51.131555 | -3.017110 | Male | 25-34 | Other ethnic group - Not stated | NaN | Police and Criminal Evidence Act 1984 (section 1) | NaN | A no further action disposal | NaN | False |
| 3 | Person search | 2020-06-01T00:40:00+00:00 | NaN | NaN | 51.475269 | -2.611913 | Male | 18-24 | Other ethnic group - Not stated | Asian | Misuse of Drugs Act 1971 (section 23) | Controlled drugs | A no further action disposal | NaN | False |
| 4 | Person search | 2020-06-01T00:50:00+00:00 | NaN | NaN | 51.454252 | -2.513465 | Male | over 34 | Black/African/Caribbean/Black British - Caribbean | Black | Police and Criminal Evidence Act 1984 (section 1) | NaN | A no further action disposal | False | False |

Fig. 5. **last data frame view**(source:- self)

**last data frame preview**

**data frame for independent variables**

```
#Creation of an independent and dependent data framework
df=pd.DataFrame()
```

```
#independent variable which doesnot depend on any thing as we need them for data visualization
df["Self-defined ethnicity"]=dfs["Self-defined ethnicity"]
df["Officer-defined ethnicity"]=dfs["Officer-defined ethnicity"]
df["Outcome"]=dfs["Outcome"]
```

```
df
```

Fig. 6. **data frame for independent variables**(source:- self)

**changing the empty sells and getting the ethnicity and outcomes**

```
df1=df["Outcome"].fillna("A no further action disposal")
```

```
df2=df["Officer-defined ethnicity"].fillna("White")
```

```
df3=df["Self-defined ethnicity"].fillna("A no further action disposal")
```

```
dff=pd.DataFrame()
```

```
dff["Self-defined ethnicity"]=df1
dff["Officer-defined ethnicity"]=df2
dff["Outcome"]=df3
```

```
dff
```

| | Self-defined ethnicity | Officer-defined ethnicity | Outcome |
|---|---|---|---|
| 0 | A no further action disposal | White | A no further action disposal |
| 1 | A no further action disposal | White | A no further action disposal |
| 2 | A no further action disposal | White | Other ethnic group - Not stated |
| 3 | A no further action disposal | Asian | Other ethnic group - Not stated |
| 4 | A no further action disposal | Black | Black/African/Caribbean/Black British - Caribbean |
| ... | ... | ... | ... |
| 65242 | A no further action disposal | White | Other ethnic group - Not stated |
| 65243 | Arrest | White | White - English/Welsh/Scottish/Northern Irish/... |
| 65244 | A no further action disposal | White | White - English/Welsh/Scottish/Northern Irish/... |
| 65245 | A no further action disposal | White | White - English/Welsh/Scottish/Northern Irish/... |
| 65246 | Arrest | White | White - English/Welsh/Scottish/Northern Irish/... |

65247 rows × 3 columns

Fig. 7. **editing the cells which are empty values ethnicity and outcomes**(source:- self)

**by the fig 8 we can say that the united kingdom police are not biased on any ethnic group. they have equal and fair to all the people in the united kingdom. where we can say that during the hardships like these pandemics they are performing a good job and they are very friendly to the people.**

**Data visualization by python programming**

**code of Data visualization by python programming scatter plot and histogram**

**Data visualization by python programming scatter plot**

**Data visualization by python programming histogram**

```
import matplotlib.pyplot as plt
plt.figure(figsize=(30, 25))
dfm.plot(kind = 'bar')
```

```
<AxesSubplot:xlabel='Officer-defined ethnicity'>
```

```
<Figure size 2160x1800 with 0 Axes>
```

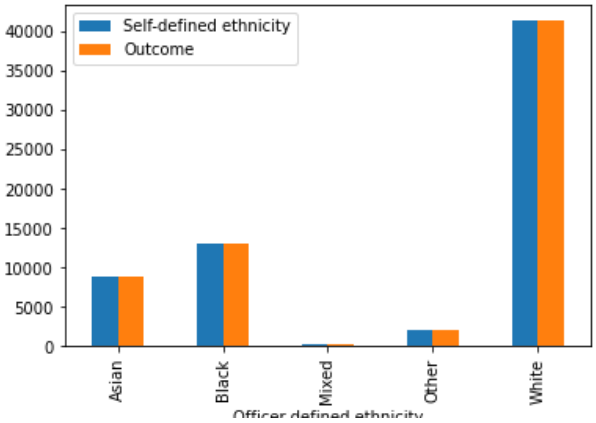



Fig. 8. **Data visualization by python programming** (source:- self)

```
#scatterplot for data visulaization
sns.lmplot(dfm.columns[0], dfm.columns[1], data=dfm, fit_reg=False)

## Histogram
sns.displot(data, bins=20, kde=False, rug=True)
```

Fig. 9. **Data visualization by python programming scatter plot and histogram** (source:- self)

```
warnings.warn(
```

```
<seaborn.axisgrid.FacetGrid at 0x117d0b4dc70>
```

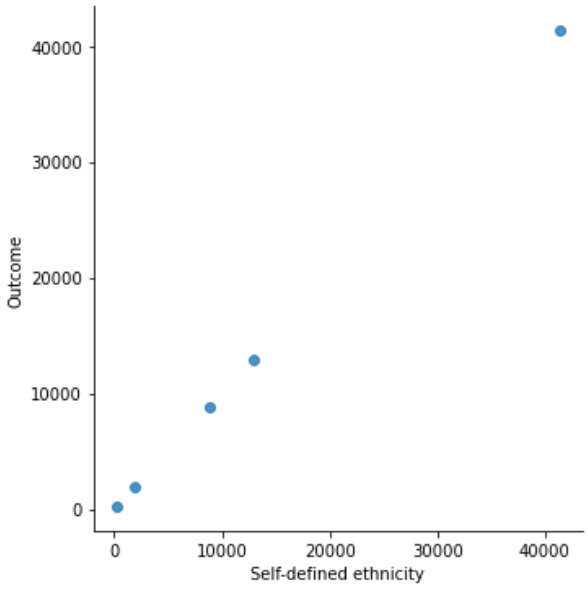



Fig. 10. **Data visualization by python programming scatter plot** (source:- self)

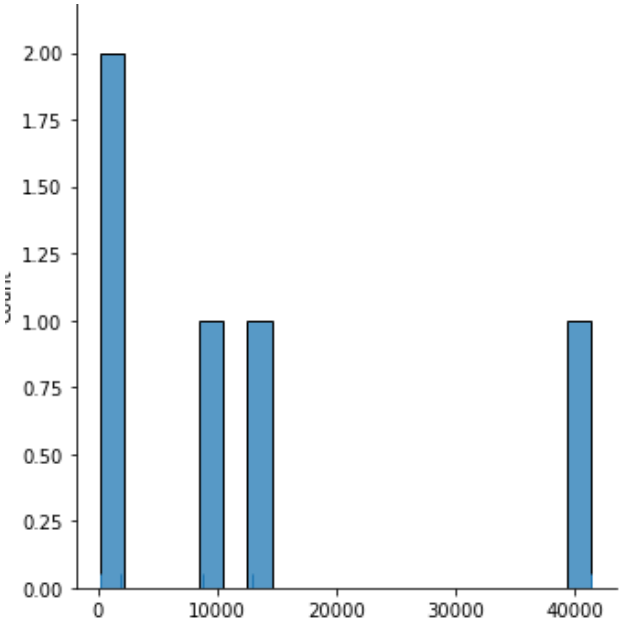



Fig. 11. **Data visualization by python programming histogram** (source:- self)

## VII. Discussion

by doing the work and got the end result shows that uk police are not biased against any of the black and asians **DISCUSSION**

```
#grouping the cases and people belongs to the ethnic
dfm = dff.groupby('Officer-defined ethnicity').count()
```

```
dfm
```

| Officer-defined ethnicity | Self-defined ethnicity | Outcome |
|---|---|---|
| Asian | 8800 | 8800 |
| Black | 12945 | 12945 |
| Mixed | 185 | 185 |
| Other | 1948 | 1948 |
| White | 41369 | 41369 |

Fig. 12. **uk police are not biased against any of the black and asians** (source:- self)

as we can see the outcome for all the groups are same. Clearly, this is not the case, and the UK police is not inclined to any specific group.

## VIII. Conclusion

The predictive analysis revealed that the issue 'Are UK police biassed?' is incorrect. This has been demonstrated by data segregation based on ethnic groups. The grouping demonstrates that the outcomes of black or other non-native police officers against the white population are significantly more pronounced than in other groups.

## IX. Reference

### References

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