Program (Ungrouped Data) :

```python
import numpy as np
import pandas as pd
import math

data = pd.read_csv('../Country Wise Gender.csv')
custom = data[['2014 Male', '2015 Male']]

x = custom['2014 Male']
y = custom['2015 Male']
x_mean = x.mean()
y_mean = y.mean()

custom['dx'] = x - x_mean
custom['dy'] = y - y_mean

custom['dx_squared'] = custom['dx']**2
custom['dy_squared'] = custom['dy']**2

custom['dxdy'] = (x - x_mean) * (y - y_mean)
print(custom)

numerator = custom['dxdy'].sum()
denominator = math.sqrt(custom['dx_squared'].sum() * custom['dy_squared'].sum())
r = numerator/denominator

print("Correlation: ", end='')
print(r)
if 0.3 < r < 0.75:
    print('It is Moderately positively Correlated!')
elif 0.75 <= r < 1:
    print('It is Highly positively Correlated!')
elif r >= 1:
    print('It is perfect positively Correlated!')
elif -0.3 < r < -0.75:
```

```
    print('It is Moderately negatively Correlated!')
elif -0.75 <= r < -0.1:
    print('It is Highly negatively Correlated!')
elif r <= -1:
    print('It is perfect negatively Correlated!')
else:
    print('It is not that correlated')
```

Output (Ungrouped Data) :

```
    2014 Male  2015 Male         dx      dy  dx_squared  dy_squared         dxdy
0        53.7       53.8  -4.272581   -4.95   18.254945     24.5025    21.149274
1        55.9       55.5  -2.072581   -3.25    4.295591     10.5625     6.735887
2        46.2       47.2 -11.772581  -11.55  138.593655    133.4025   135.973306
3        53.7       54.3  -4.272581   -4.45   18.254945     19.8025    19.012984
4        50.8       51.9  -7.172581   -6.85   51.445913     46.9225    49.132177
..        ...        ...        ...     ...         ...         ...          ...
58       50.3       54.2  -7.672581   -4.55   58.868494     20.7025    34.910242
59       71.2       74.0  13.227419   15.25  174.964623    232.5625   201.718145
60       64.6       65.8   6.627419    7.05   43.922687     49.7025    46.723306
61       57.9       57.8  -0.072581   -0.95    0.005268      0.9025     0.068952
62       55.8       55.3  -2.172581   -3.45    4.720107     11.9025     7.495403

[63 rows x 7 columns]
Correlation: 0.6179246816482735
It is Moderately positively Correlated!
```