Sales of products in four different regions is tabulated for males and females. Find if male-female buyer rations are similar across regions.

In [1]:
```
import pandas as pd
import numpy as np
from scipy import stats
import seaborn as sns
```

In [2]:
```
sales_data = pd.read_csv('BuyerRatio.csv')
sales_data
```

Out[2]:

	Observed Values	East	West	North	South
0	Males	50	142	131	70
1	Females	435	1523	1356	750

In [4]:
```
Males = [50,142,131,70]
Females = [435,1523,1356,750]
sales = [Males,Females]
print(sales)
```

```
[[50, 142, 131, 70], [435, 1523, 1356, 750]]
```

In [5]:
```
chistats = stats.chi2_contingency(sales)
```

In [7]:
```
print('chi = %f p_value = %f' % (chistats[0],chistats[1]))
print('Intercept by p_value')
if chistats[1] < 0.05:
    print('we reject null hypothesis')
else:
    print('we accept null hypothesis')
```

```
chi = 1.595946 p_value = 0.660309
Intercept by p_value
we accept null hypothesis
```