t-test

example

```
from scipy import stats
#t-test of test vs control for our target metric
test = stats.ttest_ind(data[data['test'] == 1]['label'], # test
                       data[data['test'] == 0]['label'], # control
                       equal_var=False)


countries = [name for name in data['country'].unique() if name is not np.nan]

print('{0:15s} {1:>15s} {2:>15s} {3:>10s}'.format('Country', 'Test Rate', 'Control Rate', 'P-Val
print('-' * 65)
for country in countries:
    test_val = data[(data['country'] == country) & (data['test'] == 1)]['conversion'].values
    cont_val = data[(data['country'] == country) & (data['test'] == 0)]['conversion'].values

    test_mean = test_val.mean()
    cont_mean = cont_val.mean()
    p_val = ttest_ind(test_val, cont_val, equal_var=False).pvalue

    print('{0:15s} {1:15.5f} {2:15.5f} {3:10f}'.format(country, test_mean, cont_mean, p_val))

'''
Country               Test Rate    Control Rate    P-Value
-----------------------------------------------------------------
Mexico                  0.05119         0.04949   0.165544
Venezuela               0.04898         0.05034   0.573702
'''


ctr_val = data[data['test'] == 0]['revenue'].values
exp_val = data[data['test'] == 1]['revenue'].values
print(ttest_ind(ctr_val, exp_val, axis=0, equal_var=False))
```