

Annexure C – Python code for calculating Cronbach's Alpha

```
import pandas as pd
df = pd.DataFrame({'TB1': [1, 8, 1, 1],
                   'TB2': [1/8, 1, 1/5, 1/6],
                   'TB3': [1, 5, 1, 2],
                   'TB4': [1, 6, 1, 1/2]})
```

df

	TB1	TB2	TB3	TB4
0	1	0.125000	1	1.0
1	8	1.000000	5	6.0
2	1	0.200000	1	1.0
3	1	0.166667	2	0.5

```
import pingouin as pg
import numpy as np
```

```
pg.cronbach_alpha(data=df)
```

```
(0.8972656142377471, array([0.478, 0.993]))
```

```
import pandas as pd
df = pd.DataFrame({'PB1': [1, 1/7, 1/7, 1/6, 1/6, 1/8, 1, 1],
                   'PB2': [7, 1, 1, 1, 1/5, 1/6, 1/2, 1/4],
                   'PB3': [7, 1, 1, 2, 2, 1/5, 1, 1/3],
                   'PB4': [6, 1, 1/2, 1, 1, 1/5, 1, 6],
                   'PB5': [8, 5, 1/2, 1, 1, 1/5, 1, 2],
                   'PB6': [6, 6, 5, 5, 5, 1, 8, 8],
                   'PB7': [1, 2, 3, 1, 1, 1/8, 1, 3],
                   'PB8': [8, 4, 3, 1/6, 1/6, 1/8, 5, 1]})
```

df

	PB1	PB2	PB3	PB4	PB5	PB6	PB7	PB8
0	1.000000	7.000000	7.000000	6.0	8.0	6	1.000	8.000000
1	0.142857	1.000000	1.000000	1.0	5.0	6	2.000	4.000000
2	0.142857	1.000000	1.000000	0.5	0.5	5	3.000	3.000000
3	0.166667	1.000000	2.000000	1.0	1.0	5	1.000	0.166667
4	0.166667	0.200000	2.000000	1.0	1.0	5	1.000	0.166667
5	0.125000	0.166667	0.200000	0.2	0.2	1	0.125	0.125000
6	1.000000	0.500000	1.000000	1.0	1.0	8	1.000	5.000000
7	1.000000	0.250000	0.333333	6.0	2.0	8	3.000	1.000000

```
import pingouin as pg
```

```
pg.cronbach_alpha(data=df)
```

```
(0.8569023795830761, array([0.634, 0.967]))
```

```
import pandas as pd
df = pd.DataFrame({'FB1': [1, 2, 1],
                   'FB2': [1, 1, 1/5],
                   'FB3': [1, 5, 1]})

df
```

	FB1	FB2	FB3
0	1	1.0	1
1	2	1.0	5
2	1	0.2	1

```
import pingouin as pg

pg.cronbach_alpha(data=df)

(0.8569023795830761, array([0.634, 0.967]))
```

```
import pandas as pd
df = pd.DataFrame({'SGB1': [1, 1, 3, 1/7],
                   'SGB2': [1, 1, 1, 1/7],
                   'SGB3': [1/3, 1, 1, 1/7],
                   'SGB4': [7, 7, 1/5, 1]})

df
```

	SGB1	SGB2	SGB3	SGB4
0	1.000000	1.000000	0.333333	7.0
1	1.000000	1.000000	1.000000	7.0
2	3.000000	1.000000	1.000000	0.2
3	0.142857	0.142857	0.142857	1.0

```
import pingouin as pg

pg.cronbach_alpha(data=df)

(0.881737653281901878, array([-3.958, 0.933]))
```