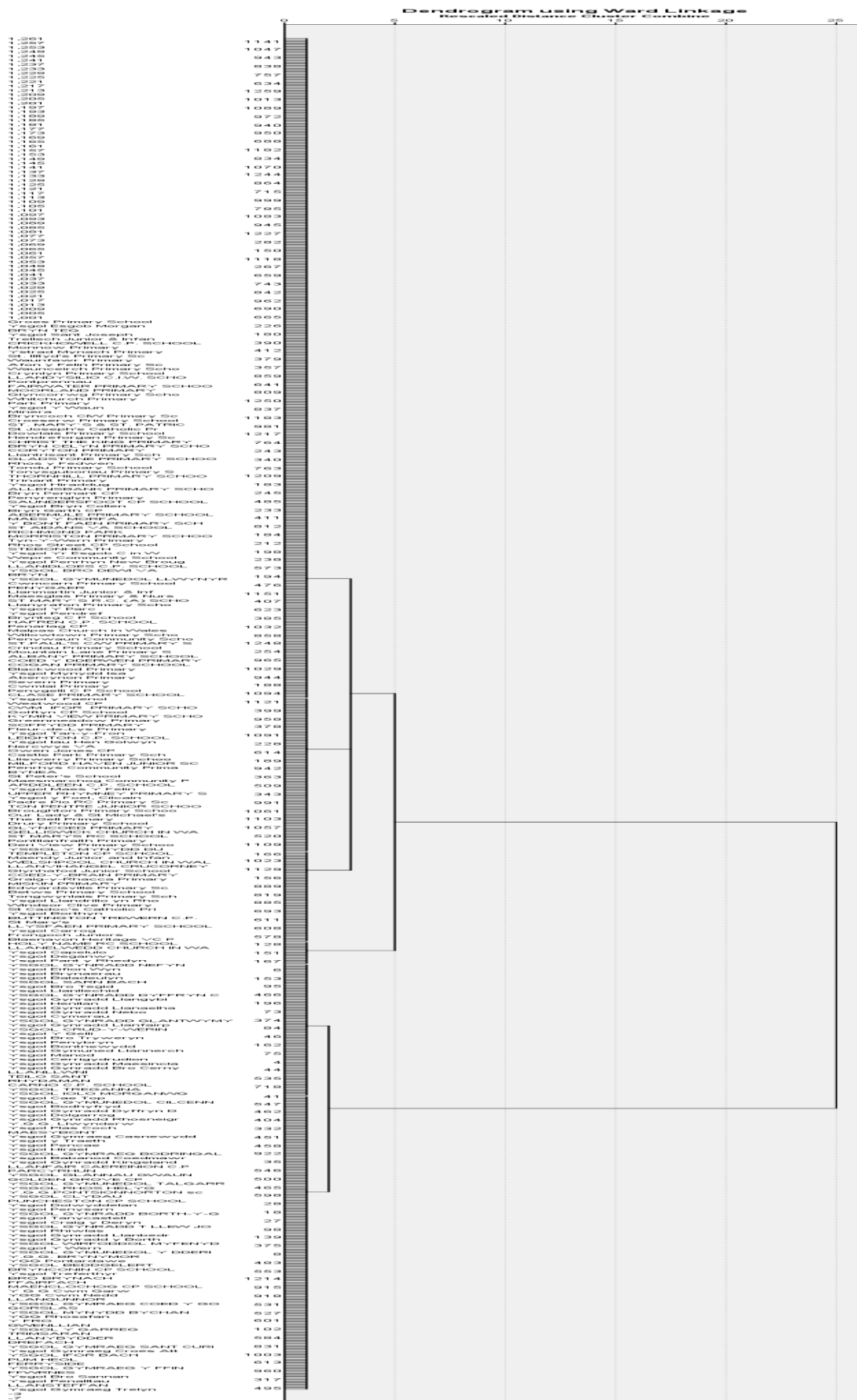


Appendix 1: Dendrogram, Cluster Indices and Scree Graph (Gap Statistic)



Indices for the Number of Clusters

In the *R Statistical Package*, the *NbClust* function provides various indices for suggesting the appropriate **number of clusters**. Twenty-four different indices are given below suggesting up to six clusters. Two, three, four and five clusters are all proposed. Overall, these indices are too varied and hence of little help.

INDEX	KL	CH	Hartigan	CCC	Scott	Marriot	TrCovW
Number clusters	2	2	3	6	4	3	4
Value Index	9.6195	1904.06	352.83	65.7965	4930.26	6.79E+2	195320.7
INDEX	TraceW	Friedman	Rubin	Cindex	DB	Silhouette	Duda
Number clusters	4	4	5	5	5	5	3
Value Index	700.6256	346.513	-1.0274	0.0895	0.7208	0.6483	2.4544
INDEX	PseudoT2	Beale	Ratkovsky	Ball	PtBiserial	Frey	McClain
Number clusters	3	3	2	3	4	2	2
Value Index	503.6841	-3.963	0.4794	1156.32	0.7694	1.7035	0.2646
INDEX	Dunn	SDindex	SDbw				
Number clusters	2	2	5				
Value Index	0.0663	1.0018	0.4096				

Gap Statistic

