Report
The results of the values of criterion functions as well as their corresponding entropies and purities are listed as below:
M1
SSE
20 clusters:
Best SSE 2066.371 Entropy 1.3560404 Purity 0.69703746
40 clusters:
Best SSE 1958.1425 Entropy 0.96602196 Purity 0.7912241
60 clusters:
Best SSE 1857.9218 Entropy 0.84226453 Purity 0.8207099
I1
20 clusters:
Best I1 4482.233 Entropy 1.3565882 Purity 0.7043041
40 clusters:
Best I1 4653.089 Entropy 0.9622435 Purity 0.80030745
60 clusters:
Best I1 4806.221 Entropy 0.8737636 Purity 0.8148407
M2
SSE
20 clusters:
Best SSE 2076.9705 Entropy 1.2239628 Purity 0.7323924
40 clusters:
Best SSE 1967.0948 Entropy 0.9530165 Purity 0.7937395
60 clusters:
Best SSE 1861.374 Entropy 0.8827669 Purity 0.8106484
I1
20 clusters:
Best I1 4482.233 Entropy 1.3565882 Purity 0.7043041
40 clusters:
Best I1 4653.089 Entropy 0.9622435 Purity 0.80030745
60 clusters:
Best I1 4806.221 Entropy 0.8737636 Purity 0.8148407

M3
SSE
20 clusters:
Best SSE 2066.371 Entropy 1.3560404 Purity 0.69703746
40 clusters:
Best SSE 1958.1425 Entropy 0.96602196 Purity 0.7912241
60 clusters:
Best SSE 1878.8329 Entropy 0.8674904 Purity 0.81106764
I1
20 clusters:
Best I1 4470.095 Entropy 1.2296478 Purity 0.7335103
40 clusters:
Best I1 4653.089 Entropy 0.9622435 Purity 0.80030745
60 clusters:
Best I1 4782.2837 Entropy 0.8966765 Purity 0.8017049

The M1, M2, M3 stands for three different methods for vector representations. The the results above are sorted by two different objective functions one is SSE and another one is I1.
The run time of this program will be O(K*I*M*N) where K is the number of clusters, I is the number of iterations and M is the total points and N is the total amount of attributes. Here the attributes are dimensions in very matrix.

The different values of entropy and purities demonstrate different performances for certain choices of total numbers of clusters and criterion functions. Generally, as the number of clusters increases, the entropies decrease and the purities increase, which stands for the improvement of clustering quality.