Highlights:

1. A novel variant of GWO, enhanced grey wolf optimizer (EGWO), is proposed.
2. A clustering method based on EGWO is formulated.
3. The parallelized version of EGWO using MapReduce architecture, named MR-EGWO, is also introduced for efficacious clustering of large datasets.
4. The efficiency of the proposed method is tested on four large scale clustering datasets and compared with four state-of-the-art MapReduce based clustering methods in terms of F-measure.
5. To validate the parallel performance of MR-EGWO speedup graphs are analyzed.