

DISTRIBUTION CENTER LOCATION ANALYSIS USING CENTRAL OF GRAVITY METHOD AND NEIGHBORHOOD SEARCH

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Abstract:

Distribution Center is an essential part of modern logistics system. The location of distribution center is an operating parameter that significantly impacts overall operation cost. The objective of this research is to develop a tool to determine a suitable location of the distribution center. The tool developed in this research is a hybrid approach between conventional gravity model and neighborhood search. Even though, the gravity model may not reflect real distance to demand area for distribution center but it is a very fast method in determining its location. By adding neighborhood search into algorithm, it will find a better location in comparison to gravity model solution. As a result, the best location can be determined quite quickly. In addition, the developed tool is used with google map where demand area and distribution center is located based on real road network in the area. As a result, the location identified by the algorithm is more realistic in location which is nearby suitable road. Furthermore, the user can be used to evaluate alternative locations based on any given demand.

Keywords: distribution center, location analysis, gravity method, neighborhood search