

「校際傑出學術論文授權暨發表會」

論文摘要表

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論文名稱	廢棄物清運業最低成本路線規劃模式之研究
英文論文名稱	Optimal Vehicle Routing and Scheduling for Waste Collection
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校院名稱	國立屏東科技大學
系所名稱	企業管理學系暨研究所
學年度	99 學年度
語文別	中文
<p>關鍵詞：GIS 全球定位系統、關鍵路徑法(CPM)、路線、最低成本、廢棄物清運</p>	
<p>英文關鍵詞： Geographic Information System (GIS), Vehicle Routing, Nearest Neighbor Algorithm, Waste Collection, Critical Path Method (CPM)</p>	
<p>中文摘要</p> <p>近年來各縣市提倡垃圾不落地政策，然而民眾無法配合政府垃圾清</p>	

運時間，促成國內企業相繼投入廢棄物清運業之經營。過去單純採用 GIS 全球定位系統，雖然清楚了解每位客戶所在位置以及相對距離，但未搭配廢棄物清運業所需之車輛載重限制、時間的控管、降低油耗量、磨損並減少人力浪費問題加以探討。本研究以 GIS 加入最鄰近法與掃描法，並運用關鍵路徑法(CPM)，以廢棄物清運業者公司清運流程中達到最低成本與最適路徑，再以實際數據範例，驗證此清運路線降低成本之可行性，並比較改善前後成本差異，研究結果證實規劃後之清運路線，降低目前清運廢棄物所花費之成本。本研究結果可做為相關產業進行廢棄物清運路線規劃之參考模式，有助於提高企業經營績效。

英文摘要

There are many studies focus on waste removal and transportation routes planning. However, it has not developed a set of standards. Although using Geographic Information System global positioning system provides a clear understanding of each customer's location and relative distance, however, the route planning in the implementation process, often encounters many problems. This study uses a case study approach to utilize the global positioning system - Geographic Information System (GIS), the Nearest Neighbor Algorithm, the Path-Scanning Algorithm and Critical Path Method (CPM) for waste collection and transportation process to develop a model with optimal route and lowest costs. The model is verified with an example of actual data to prove the feasibility. A comparison is then conducted to compare the costs before and after the implementation. The evidence shows that the total costs are reduced after the modified routs and the capacity of the waste removal cart is substantially improved. The results provide a model for the waste removal industry to implement and therefore to enhance their performance.

Keyword : Geographic Information System (GIS), Vehicle Routing, Nearest Neighbor Algorithm, Waste Collection, Critical Path Method (CPM)