

摘要

都市地區停車問題日益嚴重，為了能夠解決都市中的停車問題，而且又不影響到一般道路的行車安全，興建「都市路外停車場」已成為政府當前改善停車問題之重要政策，所以適時、適地闢建都市路外停車場，提供數目合理、有效率之停車位已刻不容緩；然而興建路外停車場需要相當龐大的經費，因此在停車場設置區位的選定上，必須配合都市發展的需要，滿足當地的停車需求，以達到紓解都市停車問題的最終目標，並使有限的社會資源做最有效的利用。

然而，現今吾人所處的社會環境日趨複雜，整個都市地區的發展充滿許多不確定性，因此當我們在進行都市路外停車場相關設置區位方案的決策評選時，通常都是在「模糊環境」(fuzzy environment)下進行；同時吾人在評估方案的過程中，亦常包含有許多人為主觀判斷且牽涉甚廣的社會層面。

基於以上的考量，本研究首先針對影響都市路外停車場設置區位之相關因素加以深入探討，並透過與相關業者及專家學者訪談的方式，將眾多影響因素整理成影響因素集；其次利用專家問卷的方式，配合「模糊德菲法」挑選適當的影響因素作為評估準則，以建立都市路外停車場設置區位評選之衡量指標架構；接著應用「模糊層級分析法」求算準則權重，最後則使用「模糊綜合評判」的方式對於台南市三個都市路外停車場預定地點作為評選方案來從事最佳方案的評選工作。

因此，本研究所歸納出都市路外停車場的評選程序與架構，除了可以說是一種兼具實用性與客觀性的評估方法外，亦可協助決策者在複雜及不確定的模糊環境下進行決策，以提昇決策品質，同時也可以提供政府相關單位往後在評估審查都市路外停車場設置區位時之參考。

關鍵字：模糊多準則決策方法、模糊德菲法、模糊層級分析法、模糊綜合評判、不確定性情況

Abstract

In order to relieve the serious parking problem of all cities in Taiwan but not to influence driving safety, establishing public off-road parking lots have becoming one of the government's major policy. Since the parking lot is one kind of public facility, we have to consider its site selection variables which contains the characteristics of multi-criteria decision from the viewpoint of social welfare embracing principles of efficiency and equity. So we should choose a suitable location where can satisfy with certain parking demand and meet a city's development now or in the future.

On the other hand, the social environment we live is getting more and more complex. The development of the entire city is full of uncertainty. In other words, we are usually under "fuzzy environment" when evaluating the off-road parking lot cases. At the same time, there are a lot of subjective judgements during the decision making process.

Based on above considerations, we hope to develop a Fuzzy Multi-criteria Decision Making method and procedure to evaluate the off-road parking lots in the city. Firstly, the study confers all site-related factors with experts, proprietors, and government officials. And take those considerations into the influenced factor-collections. Secondly, we make use of Fuzzy Delphi method to determine the criteria which can mainly affects the off-road parking lot site selection. Thirdly, assessing the weights for the criteria by applying them to Fuzzy Analytic Hierarchy Process method that can gets better results than other traditional methods. Finally, we use Fuzzy Synthetic Decision method to evaluate the three feasible off-road parking lot site alternatives in Tainan City and then submit the best site to the decision maker.

It is hoped that the outcome of this study will not only help the policy-making agency to make decision under uncertain condition by applying the fuzzy theory but also provide the agency with a reference to the evaluation of the off-road parking lots in the urban area.

Keywords: Fuzzy Multi-criteria Decision method, Fuzzy Delphi method, Fuzzy Analytic Hierarchy Process method, Fuzzy Synthetic Decision, uncertain condition