

活動停留對於運具選擇影響之研究

－ 以新竹科學園區為例

研究生:王君如

指導教授:高凱

國立交通大學運輸科技與管理學系碩士班

摘要

繁忙的都市生活，多數通勤者會考慮時間限制、方便性、接送小孩的責任等種種因素，在個人效用極大的情況下，將通勤旅程分為數個旅次完成。過去二、三十年，在以活動為基礎的旅運分析中，已經發現通勤者在通勤過程中會有活動停留的行為，近年來，國外開始有些研究結合通勤者活動停留的行為及運具選擇。

在本研究中欲利用台灣的實證分析，驗證以下幾點：(1)通勤者的活動停留行為是否與社經背景相關；(2)活動停留與運具選擇間是否具有因果關係；(3)慣性是否會影響通勤者考慮運具使用時的決策；(4)私人運具使用率的偏高是否與大眾運輸旅行時間的可靠性較低有關。為了驗證研究目的，利用活動基礎分析建立通勤者運具選擇模式，將替選方案區分為私人運具及大眾運輸兩種。針對新竹科學園區的通勤者，透過網路及面訪，蒐集得到401份有效問卷，再以二元羅吉特為分析方法，透過LIMDEP軟體對於模式的結果進行探討。

透過實證的結果發現，婚姻及家戶結構對於通勤者是否停留具有明顯的相關，尤以家中有小孩者更為顯著。有關於活動停留的解釋變數，可發現停留天數越多時，越不願意使用大眾運輸，而傾向於使用私人運具。由於通勤者時間上的限制，當通勤途中須停留的持續時間越長，則通勤者為了便利會傾向於使用私人運具。此外通勤者容易受到私人運具的方便性所吸引而習慣使用私人運具，對於大眾運輸的使用較難養成慣性。而在旅行時間可靠性變數中顯示，大眾運輸準確程度及對運具的掌握程度越差，通勤者會選擇使用私人運具。

關鍵字：運具選擇、活動停留、二元羅吉特、活動基礎分析

The Impact of Stop-Making on Commute Mode Choice: An Empirical Analysis

Student: Chun-Ju Wang

Advisor: Dr. Kai Kao

Department of Transportation Technology and Management
National Chiao Tung University

Abstract

Most commuters select the travel pattern which derives the maximized utility subject to time and money budget constraints, scheduling convenience and parent responsibility in the busy city life. In other words, the commute tour may be divided into several trips. In the past decades, some activity-based studies detected that a larger number of stops will have a higher degree of separation of activities. These activities are associated with a higher utility. In recent years, some studies start to investigate the relationship between stop-making behavior and mode choice of individuals.

In this study, we consider the impacts of commute stop-making as well as commute travel time reliability on commute mode choice. In Taiwan, we would like to figure out following points based on the empirical analysis, as (1) the relationship between commuter's stop-making behavior and his/her background; (2) causal relationship between stop-making and mode choice; (3) how could inertia affect the mode choice decision; (4) is lower public mode reliability causing a higher private mode usage. We adopted a survey approach to collect information from Hsinchu Science Park commuters. The complete sample consists of 401 individuals and it uses binary logit framework method to estimate. Furthermore, the commercial software package LIMDEP was used to calibrate parameters.

The results are: (1) Commute stop-making does have an effect on mode choice. (2) Travel time reliability is an important variable in commute mode choice decisions. (3) Household structure significantly influences the activity and travel patterns of commuters. (4) Furthermore, it is hard to change the habit of commute mode, especially from private to public mode.

Key Words: mode choice, stop making, binary logit, activity based analysis