

2

**ESTIMATING PRICE AND SERVICE ELASTICITY OF TRANS-
URBAN TRANSPORTATION DEMAND IN KLANG VALLEY.**

**BY
NURULHUDA BINTI MOHD SATAR
(EGA030035)**

**SUBMITTED TO THE FACULTY OF ECONOMICS AND
ADMINISTRATION, UNIVERSITY OF MALAYA IN PARTIAL
FULFILLMENT OF THE REQUIREMENT FOR THE DEGREE OF
MASTER OF ECONOMICS.**

JUNE 2005.



ACKNOWLEDGEMENTS

I would like to express the deepest gratitude to my supervisor, Dr. Fatimah Kari who continually and convincingly conveyed her direction, assistance, and guidance. Without her guidance and persistent help, this research paper would not have been possible. I would also like to thank friends who lend their helping hands in many ways, especially in conducting the survey and share their valuable comments and ideas. Finally, words alone cannot express the thanks I owed to my family members for their encouragement and assistance.

NurulHuda binti Mohd Satar

Faculty of Economics and Administration

University of Malaya

June 2005.

ABSTRACT

Information on the elasticity of urban transportation demand with respect to price or service level is important in analyzing the effects of urban travel demand management policies. For a certain policy to be successfully implemented depends on the level of acceptance of the policy. The two important issues to address under transportation facilities include (1) reliable prediction of demand, and (2) efficient estimation of the users response to changes in prices and the characteristics of the services; i.e. the price and service elasticity. Therefore the objective of this research paper is to provide information on the effectiveness of policy measures to reduce demand for trans-urban travel in private automobiles. Specifically, the study is intended to derive and analyze the demand function for trans-urban transportation and to estimate the price elasticity of the demand function. This research found that the elasticity of demand for private transportation with respect to fuel price and parking fee are estimated to be -0.075020 and -0.033792 respectively, suggesting that the price-based travel demand management policies are relatively ineffective. Meanwhile, the elasticity of private transportation demand with respect to in-vehicle time appears to be much higher than fuel and parking cost. This suggests that any regulation to increase the travel time may be effective in reducing demand for travel in private vehicle. On the other hand, the car users consider services quality as an important factor in using public transportation. This is shown by the higher elasticity of public transportation demand with respect to crowdedness (-0.187055) compared to fare price (-0.069113). In term of policy making, promoting public transport usage should be based on overall service level which include comfort and travel time.

TABLE OF CONTENTS

<u>Content</u>	<u>Page</u>
Abstract	i
Table of Contents	ii
List of Illustrations	iii
1. Introduction	
1.0 <i>Research Background</i>	1
1.1 <i>Research Objectives</i>	8
1.2 <i>Research Methodology</i>	11
1.3 <i>Organization of the Report</i>	16
2. Literature Review	
2.0 <i>Introduction</i>	17
2.1 <i>Elasticity</i>	
2.1.1 <i>Definitions</i>	18
2.1.2 <i>Some Basic Elasticity Concepts</i>	20
2.2 <i>Summary of Elasticity Studies</i>	26
3. Research Findings	
3.0 <i>Introduction</i>	37
3.1 <i>Demographic Characteristics</i>	37
3.2 <i>Travel Behavior</i>	40
3.3 <i>Elasticity Estimates</i>	46
4. Conclusion and Discussion	
4.0 <i>Conclusions and Policy Implications</i>	50
4.1 <i>Limitations of the Study</i>	52
4.2 <i>Suggestions for Future Study</i>	53
5. References	54
6. Appendices	57

LIST OF ILLUSTRATIONS

<i>Tables</i>	<i>Page</i>
2.1 Commuting Elasticities of the Number of Trips, by Mode.	27
2.2 Commuting Elasticities of the Number of Kilometers, by Mode.	27
2.3 Transportation Elasticities.	29
2.4 Elasticities of Various Measures of Demand with respect to Fuel Price per Litre.	30
2.5 Recommended Transit Elasticity Values.	32
2.6 Price and Service Elasticities of Private Transportation.	34
2.7 Parameter Estimations Results for Kuala Lumpur.	35
3.1 Demographic Characteristics.	38
3.2 Travel Behavior.	41
3.3 Proportion of Income Spends on Transportation	42
3.4 Factors Affecting Car Usage.	44
3.5 Factors Affecting Public Transport Usage.	44
3.6 Elasticity Estimates of Demand for Private Transportation.	46
3.7 Elasticity Estimates of Demand for Public Transportation.	48
 <i>Figure</i>	
2.1 A Schematic of Concepts and Empirical Approaches to Estimation of Transport Demand Elasticities.	25