C82 1997

68

# 338. 1068 MAND ANALYSIS FOR ÆEPNEY SERVICES IN DSAC, INDANG, CAVITE

THESIS

EMELYN M. COSINO

Department of Economics, Management and Development Studies DON SEVERINO AGRICULTURAL COLLEGE Indang, Cavite

> April 1997

Demand Analysis for Jeepney Services in DSAC, Indang, Cavite

An Undergraduate Thesis
Submitted to the Faculty of the
Don Severino Agricultural College
Indang, Cavite

In partial fulfillment of the requirements for the degree of Bachelor of Science in Business Management (Major in Economics)



Demand analysis for jeepney services in DSAC, Indang, Cavita 338.1068 C82 1997 T.1726

EMELYN COSINO
April 1997

#### **ABSTRACT**

COSINO, EMELYN MATEL "Demand Analysis for Jeepney Services in DSAC, Indang, Cavite", BS Thesis, Don Severino Agricultural College. Indang, Cavite. April 1997. Adviser: Luzviminda A. Rodrin.

A study was conducted from November to December 1996 at the Don Severino Agricultural College. The study aimed to: 1) identify the socio-economic characteristics of commuters of jeepney; 2) determine if there is a difference in the demand for jeepney services between high school and college students and between female commuters and male commuters; 3) determine the factors affecting the demand; 4) estimate the elasticity of demand for jeepney service; and 5) identify the problems encountered by jeepney commuters in the DSAC- Indang plaza route.

A total of 239 respondents was taken from the DSAC population. Respondents' age ranged from 13 to 63, with a mean of 19 years old. The respondents were mostly female and at college level. Their destination was mostly at DEMDS. Most of them lived far from DSAC and they needed two or more rides to reach their destination. The average allowance was pegged at \$\mathbb{P}\$ 213.80/week.

The demand of female commuters differed significantly from male commuters. Males demanded more jeepney services over the other. However, the demand of high school students was not significantly different with that of the college students.

The variables that were found to affect the quantity demanded for jeepney in linear form were sex, destination, type of commuters, expenditure in tricycle, frequency of walking and number of rides. Age, allowance, and number of years of stay in DSAC were found not significant at the five percent level of significance. However, in double log form, the variables found as determinants of quantity demanded for jeepney were sex, expenditure in tricycle, type of commuters and age. In both functions used, these variables explained the dependent variables with 25 percent variation. The F-values were both highly significant.

In both forms, the jeepney service was found to be inelastic because the allowance elasticity was less than 1 and the negative sign indicates that the jeepney service was an inferior service to the commuters. On the other hand, tricycle service and frequency of walking were found as substitute for jeepney service.

The common problem reported by the respondents was lack of supply of jeepney during rush hours and bad weather. With that situation, the average demand of commuters for jeepney service was seven times in a week.

## TABLE OF CONTENTS

										Page
BIOGRAPHICAL DATA		•							•	iii
ACKNOWLEDGMENT			•	•		•		•		iv
ABSTRACT	•	•	•	•		•		•		vi
LIST OF TABLES		•	•	•		•			•	x
LIST OF APPENDIX TABLES	•	•	•			•	•	•	•	хii
INTRODUCTION	•	•	•	•		•				1
Statement of the Problem					•		•	•		2
Objectives of the Study	•		•	•		•		•		3
Importance of the Study	•									4
Definition of Terms .	•			•	•	•	•		•	5
CONCEPTUAL FRAMEWORK	•			•			•	•		7
REVIEW OF RELATED LITERATURE .	•	•	•		•	•			•	10
Jeepneys role in the transport industry	•		•	•	•		•	•	•	10
Factors affecting demand .	•	•	•				•	•		12
METHODOLOGY	•	•	•	•			•		•	14
Time and Place of the Stud	У			•			•	•		14
Sampling Technique	•			•	•			•	•	14
Data Collection	•	•		•	•				•	15
Method of Analysis			•				•			15
Hyphotheses							•			20
Level of Significance						•		•		20
Scope and Limitations of t	he	St	ud	ly					_	20

Alternative for jeepney services 27 Tricycle fare 27 Expenditure in tricycle 28 Frequency of walking 29 Reasons for the respondents choice of tricycle 30 Reasons for choosing the jeepney 31 Frequency of Jeepney Demand 32 Comparative demand of commuters based on their sex and students level of education 33 Relationship between quantity demanded for jeepney services and selected variables 35 Allowance and cross-expenditure elasticities of demand 46 Problems encountered by the jeepney commuters 50 SUMMARY, CONCLUSION AND RECOMMENDATION 50 Summary 52 Conclusion 54 Recommendation 55 BIBLIOGRAPHY 57	DISCUSSION OF RESULTS	22
Alternative for Jeepney services  Tricycle fare  Expenditure in tricycle  Frequency of walking  Reasons for the respondents' choice of tricycle  Reasons for choosing the Jeepney  Frequency of Jeepney Demand  Comparative demand of commuters based on their sex and students level of education  Relationship between quantity demanded for jeepney services and selected variables  Allowance and cross-expenditure elasticities of demand  Problems encountered by the jeepney commuters  SUMMARY, CONCLUSION AND RECOMMENDATION  Summary  Conclusion  Recommendation  558		22
Alternative for Jeepney services 27  Tricycle fare 27  Expenditure in tricycle 28  Frequency of walking 29  Reasons for the respondents choice of tricycle 30  Reasons for choosing the Jeepney Demand 32  Frequency of Jeepney Demand 32  Comparative demand of commuters based on their sex and students level of education 33  Relationship between quantity demanded for Jeepney services and selected variables 35  Allowance and cross-expenditure elasticities of demand 46  Problems encountered by the Jeepney commuters 50  SUMMARY, CONCLUSION AND RECOMMENDATION 50  Summary 52  Conclusion 54  Recommendation 55  BIBLIOGRAPHY 57	Jeepney fare	26
Expenditure in tricycle  Frequency of walking  Reasons for the respondents choice of tricycle  Reasons for choosing the jeepney  Frequency of Jeepney Demand  Comparative demand of commuters based on their sex and students level of education  Relationship between quantity demanded for jeepney services and selected variables  Allowance and cross-expenditure elasticities of demand  Problems encountered by the jeepney commuters  SUMMARY, CONCLUSION AND RECOMMENDATION  Summary  Conclusion  Recommendation  SIBLIOGRAPHY  57		27
Reasons for the respondents' choice of tricycle	Tricycle fare	27
Reasons for the respondents choice of tricycle	Expenditure in tricycle	28
Choice of tricycle	Frequency of walking	29
the jeepney 31  Frequency of Jeepney Demand 32  Comparative demand of commuters based on their sex and students level of education 33  Relationship between quantity demanded for jeepney services and selected variables 35  Allowance and cross-expenditure elasticities of demand 46  Problems encountered by the jeepney commuters 55  SUMMARY, CONCLUSION AND RECOMMENDATION 52  Conclusion 55  BIBLIOGRAPHY 57	Reasons for the respondents' choice of tricycle	30
Comparative demand of commuters based on their sex and students level of education	Reasons for choosing the jeepney	31
based on their sex and students level of education	Frequency of Jeepney Demand	32
demanded for jeepney services and selected variables	based on their sex and students	33
Problems encountered by the jeepney commuters	demanded for jeepney services	35
the Jeepney commuters	Allowance and cross-expenditure elasticities of demand	48
Summary		50
Conclusion	SUMMARY, CONCLUSION AND RECOMMENDATION	
Recommendation	Summary	52
BIBLIOGRAPHY	Conclusion	54
	Recommendation	55
	BIBLIOGRAPHY	57
APPENDICED	APPENDICES	

## LIST OF TABLES

Table	Pé	age
1	Distribution of respondents, 239 commuters, DSAC, Indang, Cavite, 1996	14
2	Socio-economic characteristics of the respondents, DSAC, 1996	23
3	Jeepney Fare Existing in DSAC- Indang Plaza Route, 1996	26
4	Alternatives for jeepney services in DSAC-Indang plaza route, 1996	27
5	Tricycle fare existing in DSAC- Indang plaza route, 1996	28
6	Expenditure of commuters for tricycle services in a week, 1996	29
7	Frequency of walking of commuters in DSAC-Indang plaza route, 1996	30
8	Reasons of the commuters in the choosing tricycle, DSAC,1996	31
9	Reasons for choosing jeepney in DSAC- Indang plaza route, 1996	32
10	Frequency of demand of commuters in jeepney services, DSAC, 1996	33
11	Comparison of commuters' demand by sex, DSAC, 1996	34
12	Comparison of commuters' demand by level of education, DSAC, 1996	35
13a	Regression estimates showing the relationship between the selected variables and quantity demanded for Jeepney services in linear form (full model)	45

135	Regression estimates showing the relationship between the selected variables and quantity demanded for jeepney services in linear form (stepwise model)	46
14a	Regression estimates showing the relationship between the selected variables and quantity demanded for jeepney services in the double log form (full model)	47
14b	Regression estimates showing the relationship between the selected variables and quantity demanded for jeepney services in the double log form (stepwise model)	48
15	Estimates of allowance and cross elasticities for jeepney services in linear form and in double log form	50
16	Problems encountered by the commuters and accessibility of jeepney services in DSAC-Indang plaza route, 1996	51

## LIST OF APPENDIX TABLES

## Appendix Table

1	Correlation matrix of demand function in linear form	58
2	Correlation matrix of demand function in double log form	59
3	Multiple regression analysis in linear form (full model)	60
4	Multiple regression analysis in double log form (full model)	61
5	Multiple regression analysis in linear form (stepwise model)	62
6	Multiple regression analysis in double log form (stepwise model)	64

## DEMAND ANALYSIS FOR JEEPNEY SERVICES IN DSAC, INDANG, CAVITE1/

### Emelyn M. Cosino

1/An undergraduate thesis presented to the faculty of the Department of Economics, Management and Development Studies, School of Agriculture, Forestry, Environment and Natural Resources, Don Severino Agricultural College, Indang, Cavite in partial fulfillment of the requirements for graduation with the degree of Bachelor of Science in Business Management (BSBM) major in Economics. Contribution No. 96-97-106-010. Prepared under the supervision of Dr. Luzviminda A. Rodrin.

## INTRODUCTION

The land transportation system abounds as an essential social service in the Philippines. Unfortunately, reality indicates that this system in the country has been characterized as perennial inefficiencies. The compounding problems are the infernal traffic jams, the increasing number of commuters during peak hours and the air pollution.

Land mass transportation in the country is composed of tricycles, jeepneys, pedicabs, minibuses, buses, taxi and lately, the LRT. The three common means of public land transport are jeepneys, buses and taxi. In some remote areas, there are calesas pulled by horses and cows and carabaos with carts. These modes of transportation are not satisfactorily sufficient in moving people to different places. Among the mentioned modes of transportation, the