

(1426/ 2005) 39-19 ,1 ,16 , :

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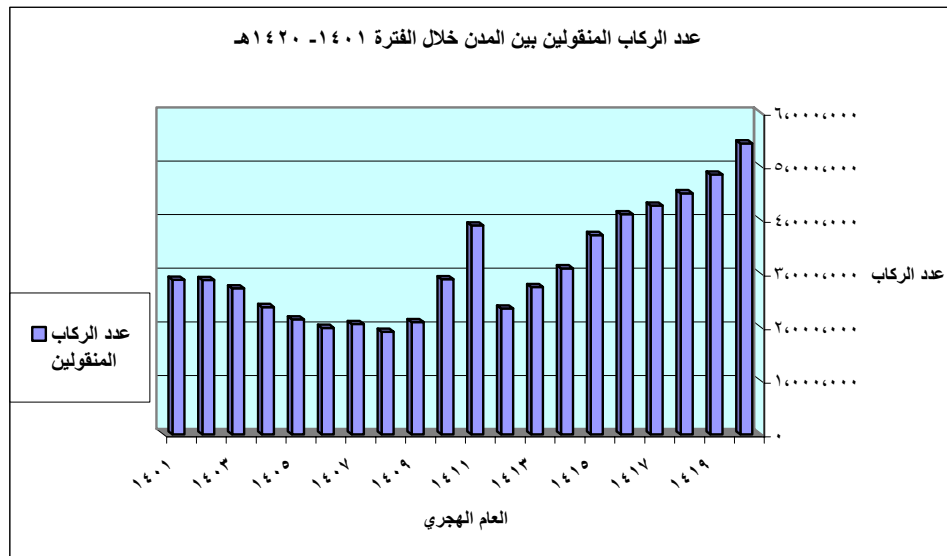
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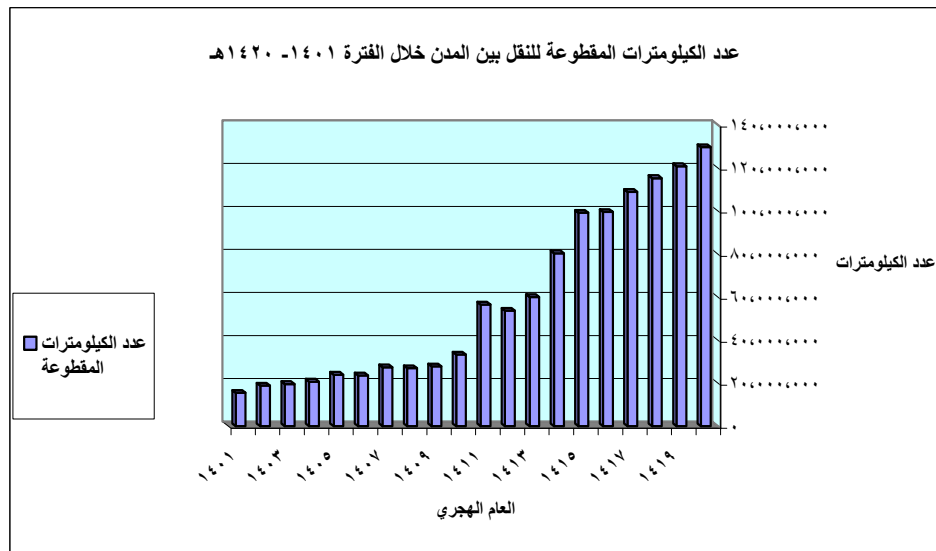
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[1]



. 1420 - 1401

:(1)



. 1420 - 1401

:(2)

-2

[2]

....

:

.(Aggregate Models)

▪

.(Disaggregate Models)

▪

)
[3]

..
)

[3,2]

[5,4]

(disaggregate Models)

[10,9,8,7,6,5]

[5,4]

15 12

24

1-2

(Multinomial Logit)

(Multinomial Probit)

[11]

:

- 1

- 2

- 3

:

....

$$P_{(k)} = \frac{e^{U_k}}{\sum_{x=1}^n e^{U_x}}$$

(k)

(i)

:

= $P_{(k)}$

(n)

(k)

= $U_{(k)}$

(x)

= $U_{(x)}$

= n

2-2

[15,14,13,12]

:

:

:

.(..)

:

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(Model Calibration)

3-2

ULOGIT BLOGIT LIMDEP

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(X²)

[t]

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(Model Validation)

4-2

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27

....

-3

1-3

[16]

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-

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(

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[17]

(1)

(17)

:(1)

t - test		
-5.23	-4.204	
-0.42	-0.397	
-5.23	-0.0037	
-3.24	-0.205	
2.14	0.235	()
-1.32	-0.228	()
-4.45	-0.0041	()
3.33	2.254	()
4.74	0.312	
R ² = 0.456		

[18]

:

-1

-2

-3

-4

29

....

-5

-6

-7

()

324

272

130

(Likelihood Ratio Test)

(Degrees of Freedom)

(X^2)

(2)

t-test

2-3

.(18)

:(2)

t - test		
1.9371	0.8791	
4.8375	1.6188	
-2.3786	-0.0826	
-2.4263	-0.0015	
4.5326	1.4562	
2.0469	0.6126	()
4.3046	0.2795	()
3.2025	1.0324	()
		()
R ² = 0.315		

: [15,6]

(Demand -1
 . Elasticities)

(Increment -2
 .Analysis Method)

-3

:

:

31

[15,6]

:

%25 :

%70 :

%5 :

(0.3153 -)

(0.145)

%25

()

:

:

$$\%23.03 = [(0.315 -) * 0.25 - 1] * 25 =$$

$$\%72.54 = (0.145 * 0.25 + 1) * 75 =$$

$$\%4.69 = (72.54 + 23.03) - 1 =$$

:

:

: ΔU_c
 : ΔU_a
 : ΔU_b
 : ΔP_c
 : ΔP_a
 : ΔP_b

:

(1)
$$\frac{P_b \times e^{\Delta U_b}}{P_b \times e^{\Delta U_b} + P_a \times e^{\Delta U_a} + P_c \times e^{\Delta U_c}} =$$

(2)
$$\frac{P_b \times e^{\Delta U_a}}{P_b \times e^{\Delta U_b} + P_a \times e^{\Delta U_a} + P_c \times e^{\Delta U_c}} =$$

(3)
$$\frac{P_b \times e^{\Delta U_c}}{P_b \times e^{\Delta U_b} + P_a \times e^{\Delta U_a} + P_c \times e^{\Delta U_c}} =$$

:

33

....

:

-

1.5

50

:

(P_a) %25 :

(P_c) %70:

(P_b) %5 :

(-0.0015)

(0.0826-)

.(2)

:

:

$$0.075 = (50-) \times 0.0015- = \Delta U_a$$

$$0.1239 = (1.5-) \times 0.0826- = \Delta U_b$$

$$0.2478 = (3-) \times 0.0826 - = \Delta U_b$$

3 ,2 ,1

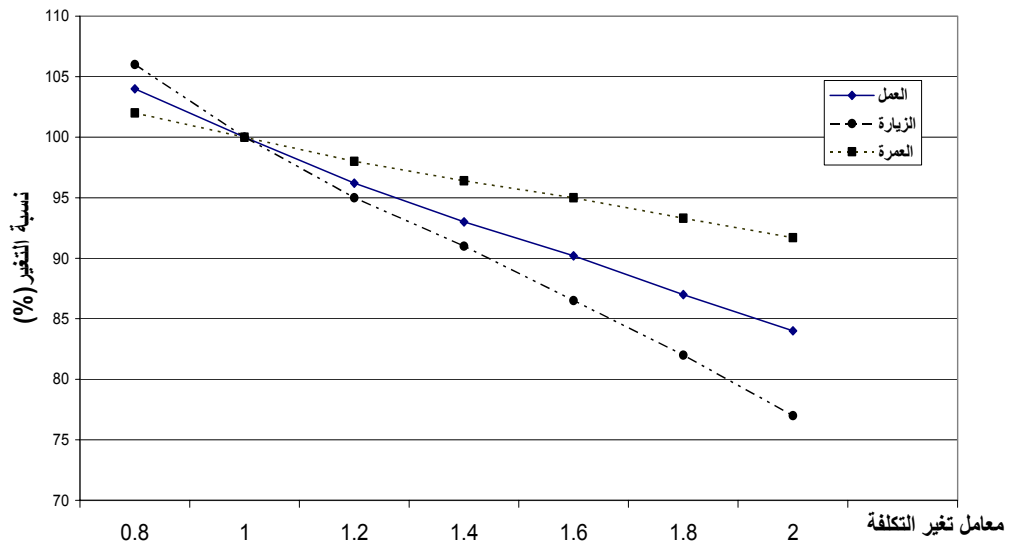
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%22 =

%73.3=

%4.7 =

(3)



:(3)

35

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1-4

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Development of Intercity Mode Choice Models for Public Transport in Saudi Arabia: Requirements and Responsibilities

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ABSTRACT. The past decade in Saudi Arabia has witnessed a very significant growth in inter-city bus transport. It is expected that demand for inter-city bus transport in the Kingdom will increase in the future due to the increase in population and other related factors. In order to meet this demand, the pertinent infrastructure needs to be provided, in addition to sizeable investments on the part of the transport companies providing this service. Given these facts, the planning for providing the right infrastructure for inter-city bus transport, and the optimum use of such infrastructure require the existence of accurate data and updated models to enable all those who are concerned about inter-city bus transport to estimate the future demand for such service based on scientifically sound methods. The purpose of this paper is to identify the requirements and responsibilities of establishing a “Database” for Intercity bus transport in Saudi Arabia, and develop intercity mode choice models for Saudi Arabia. This study is an extension to a previous funded research conducted by the researchers (and supported by KACST). The developed models can be of great benefit in estimating future demand of inter-city bus transport. Results of this study include the different dimensions needed for identifying the requirements of developing intercity mode choice models including the variables used in these models, the calibration techniques, and the identification of the organizations responsibilities.