

_____ : _____ . _____ : _____ :

מבוא לאקונומטריקה

5 :

תרגיל 4

1

(,X)


:(,Y)

X	Y
1	20
2	20
3	24
4	22
5	30

.1



.2



.3



_____ : _____ . . _____ : _____ :

? 3.5 .4

? .5

_____ ? .6

_____ ? .7

,(temp) .8

$$.Y = r + s_1X + s_2temp + u$$

/ ,
? $Y = r + sX + u$

/ ,
? $Y = r + sX + u$

/ ,
? $Y = r + sX + u$

/ ,
? $Y = r + sX + u$

.0.705154 $Y = r + s_1X + s_2temp + u$.9

? ,

:2

40 2004

- :
- , - BUSTRAVL
- ,
- , - FARE
- ,
- , - GASPRICE
- ,
- INCOME
- ,
- , - POP
- ,
- , - DENSITY
- ,
- , - LANDAREA

Correlations

		BUSTRAVL	FARE	GASPRICE	INCOME	POP	DENSITY	LANDAREA
Pearson Correlation	BUSTRAVL	1.000	-.048	.379	.229	.931	.721	.303
	FARE	-.048	1.000	.051	-.075	.015	-.141	.262
	GASPRICE	.379	.051	1.000	.136	.327	.455	-.108
	INCOME	.229	-.075	.136	1.000	.335	.459	.008
	POP	.931	.015	.327	.335	1.000	.636	.485
	DENSITY	.721	-.141	.455	.459	.636	1.000	-.227
	LANDAREA	.303	.262	-.108	.008	.485	-.227	1.000
Sig. (1-tailed)	BUSTRAVL	.	.384	.008	.078	.000	.000	.028
	FARE	.384	.	.377	.322	.464	.193	.051
	GASPRICE	.008	.377	.	.201	.020	.002	.253
	INCOME	.078	.322	.201	.	.017	.001	.481
	POP	.000	.464	.020	.017	.	.000	.001
	DENSITY	.000	.193	.002	.001	.000	.	.079
	LANDAREA	.028	.051	.253	.481	.001	.079	.
N	BUSTRAVL	40	40	40	40	40	40	40
	FARE	40	40	40	40	40	40	40
	GASPRICE	40	40	40	40	40	40	40
	INCOME	40	40	40	40	40	40	40
	POP	40	40	40	40	40	40	40
	DENSITY	40	40	40	40	40	40	40
	LANDAREA	40	40	40	40	40	40	40

_____ : _____ . _____ : _____ :

:1

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.960 ^a	.921	.907	742.911

a. Predictors: (Constant), LANDAREA, INCOME, GASPRICE, FARE, DENSITY, POP

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	212411003.554	6	35401833.93	64.143	.000 ^a
	Residual	18213267.381	33	551917.193		
	Total	230624270.935	39			

a. Predictors: (Constant), LANDAREA, INCOME, GASPRICE, FARE, DENSITY, POP

b. Dependent Variable: BUSTRAVL

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	2744.680	2641.672		1.039	.306
	FARE	-238.654	451.728	-.027	-.528	.601
	GASPRICE	522.113	2658.228	.011	.196	.845
	INCOME	-.195	.065	-.168	-3.001	.005
	POP	1.711	.231	.875	7.397	.000
	DENSITY	.116	.060	.218	1.954	.059
	LANDAREA	-1.155	1.803	-.062	-.641	.526

a. Dependent Variable: BUSTRAVL

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:2

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.959 ^a	.920	.911	724.575

a. Predictors: (Constant), LANDAREA, INCOME, DENSITY, POP

ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	212248962.786	4	53062240.70	101.069	.000 ^a
	Residual	18375308.149	35	525008.804		
	Total	230624270.935	39			

a. Predictors: (Constant), LANDAREA, INCOME, DENSITY, POP

b. Dependent Variable: BUSTRAVL

Coefficients^c

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3021.449	1011.478		2.987	.005
	INCOME	-.194	.063	-.167	-3.078	.004
	POP	1.731	.222	.886	7.786	.000
	DENSITY	.116	.057	.217	2.025	.051
	LANDAREA	-1.408	1.698	-.075	-.829	.413

a. Dependent Variable: BUSTRAVL

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 / ? /
 / ? /
 / ? / Σe^2 -
 / ? / Σy^2 -

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?154 6,789 , 919 ,16,760

, ,

?154 6,789 , 919 ,16,760

: correlations -

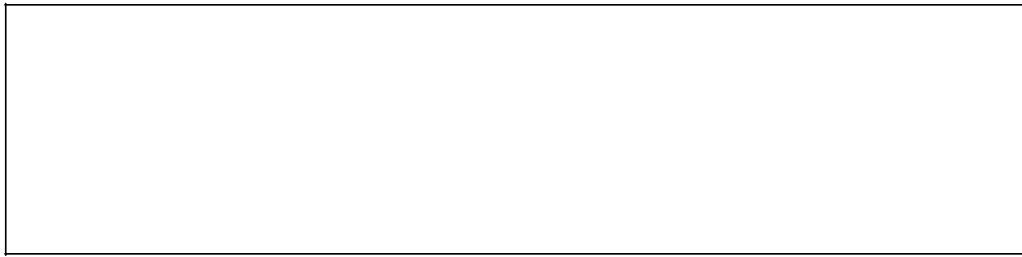
, ()

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:3

. 30 X

X - Q_X

X - P_X

Y - P_Y

- I

$$\hat{Q}_X = 170 - \underset{(0.09)}{0.23} P_X + \underset{(0.07)}{0.13} P_Y + \underset{(0.06)}{0.13} I$$

$$R^2_{0.123} = 0.666$$

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Y Y- X- •

. X ()

Y Y- X- •

. X ()

_____:	_____.	_____:	_____:
			:
_____		?	X .1
_____		?	X .2
_____		?	X .3
_____	?		Y - X .4
_____	?		Y - X .5

4

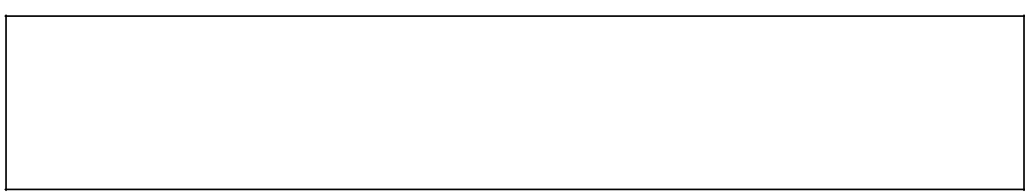
24

WOODY

33

Woody - Y
 .Woody " 3 - N
 .Woody " 3 - P
 .\$, Woody " 3 - I
 0.81125 $Y = r + S_1N + S_2P + S_3I + u$:
 ?Woody " 3 .1

?



_____ : _____ . . _____ : _____ :

?Woody " 3 .2

?

? .3

, Woody " 3 .4

?

, Woody " 3 .5

?

. , I - P .6

?

_____ : _____ . . _____ : _____ :

. Y (33) .7
? N

5

. , 20

.i , - , :
- Y_i
.i , , - Q_i
.i - L_i

(1) $\hat{Y}_i = 207.5 - 0.413Q_i$ $R^2 = 0.3555$

(2) $\hat{Y}_i = 408.8 - 0.3718Q_i - 0.552L_i$ $R^2 = 0.3875$

? . (2) (1) .1

? ? , (2) (1) .2