

MDP-DPR604

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Name: _____ Travel Cost Worksheet

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Creating a Travel Cost Demand Function

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Based on http://www.ecosystemvaluation.org/travel_costs.htm

Change this to 1 to propagate values

INSTRUCTIONS

Fill in table 1 to calculate the visits per 1000 people from each zone

Fill in table 2 to calculate the total travel costs

Summarize the travel costs/trip and visits/1000 in Table 3

We can run a regression on table 3 to find the 'a' and 'b' from

$$\text{visits/1000} = a + b * \text{travel cost}$$

I give you the results for this equation

Complete table 4 by plugging in the new travel cost into the regression equation to calculate the number of visits/1000

Summarize the travel cost and total visits in table 5

Plot the results

Zone	Total Visits/Year	Zone Population	Visits/1000
0	250	1000	250
1	700	3500	200
Total Visits	950		

Table 1: Visitor Information

Travel cost (\$/mile) \$0.50
Wage (\$/hr) 30 Wage (\$/min) 0.5

Zone	Round Trip Travel Distance	Round Trip Travel Time	Distance times Cost/Mile (\$0.50)	Travel Time times Cost/Minute (\$0.50)	Total Travel Cost/Trip
0	5	10	\$2.50	5	7.5
1	10	20	5	10	15

Table 2: Travel Cost Calculation

Zone	Visits/1000	Total Travel Cost/Trip
0	250	7.5
1	200	15

Table 3: Data for Regression

Regression Requation

Visits/1000 = constant + coef*Total Travel Cost per Trip
(NOTE: We ignore demographic variables and other factors)

Visits/1000 = 300.00 + Total Travel Cost per Trip * -6.67

SUMMARY OUTPUT

<u>Regression Statistics</u>	
Multiple R	1
R Square	1
Adjusted R Sq	65535
Standard Erro	0
Observations	2

ANOVA

	df	SS	MS	F
Regression	1	1250	1250	#NUM!
Residual	0	0	65535	
Total	1	1250		

	Coefficient	Standard Err	t Stat	P-value
Intercept	300	0	65535	#NUM!
X Variable 1	-6.6667	0	65535	#NUM!

$$\text{Visits/1000} = 300.00 + \text{Total Travel Cost per Trip} * -6.67$$

$$\text{Visits/1000} = 300 + \text{Total Travel Cost per Trip} * -6.6667$$

The equation you need

$$\text{Visits/1000} = 300.00 + \text{Total Travel Cost per Trip} * -6.67$$

Added Travel Cost \$10

Zone	Travel Cost plus \$10	Visits/1000	Population	Total Visits
0	17.5	183.33	1000	183.33
1	25	133.33	3500	466.67
			Total Visits	650.00

Table 4A: \$10 Added Travel Cost

Added Travel Cost \$20

Zone	Travel Cost plus \$20	Visits/1000	Population	Total Visits
0	27.5	116.67	1000	116.67
1	35	66.67	3500	233.33
			Total Visits	350.00

Table 4B: \$20 Added Travel Cost

Added Travel Cost \$30

Zone	Travel Cost plus \$30	Visits/1000	Population	Total Visits
0	37.5	50.00	1000	50.00
1	45	0.00	3500	0.00
			Total Visits	50.00

Table 4C: \$30 Added Travel Cost

Added Travel Cost \$40

Zone	Travel Cost plus \$40	Visits/1000	Population	Total Visits
0	47.5	-16.67	1000	0.00
1	55	-66.67	3500	0.00
			Total Visits	0.00

Table 4D: \$40 Added Travel Cost

Added Travel Cost	Total Visits
0	950.00
10	650.00
20	350.00
30	50.00
40	0.00

Table 5: Added Travel Costs vs Visits

