
RIVAL TOURISM STRATEGIES: AN ECONOMETRIC VIEW

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ABSTRACT

An analysis of the tourism strategies practiced in the United States vs. the Canadian sides of Niagara Falls is analyzed using an econometric model. The main difference in the tourism strategies of the two countries is that the United States side has been more committed to nature tourism while, the Canadian side has offered more “activities”. This paper uses an econometric model to suggest future strategies for the United States.

THE DATA AND MODEL

A short survey, designed to not annoy tourists, was administered in October 2000. The sample size for the United States' side is 119 and the Canadian side is 160. Economic, demographic, and satisfaction data was gathered. The econometric model used is specifically indebted to Asgary *et. al's* model (1997) that deals with Mexican-US cross-boarder expenditures in a somewhat parallel manner.

The survey gathered information regarding days stayed, influences on spending, satisfaction, preference of American vs. Canadian side, and the demographic variables of age, sex, education, home region, years of job experience, income, and household size.

The dependent variable is the amount of expenditures by visitors during their stay in the Niagara Falls. The model is based on expenditure models used to analyze tourist cross-boarder expenditures; (See Asgary and Walle, 2001, Asgary *et. al*, 1997, and Agarwal and Yochum, 1999). The equation that was developed is:

$$\text{LNEXP} = b + b_1 \text{LNINC} + b_2 \text{DAY} + b_3 \text{SEX} + b_4 \text{LNWKEXP} + u$$

where:

Ln:	log
LNEXP:	log of US/Canadian dollar expenditure on this visit
LNINC:	log of total household income per year
DAY:	the total number of days stayed in Niagara Falls region
SEX:	male = 1, female = 0
LNWKEXP:	log of the number of years of work experience
u:	error.

The model is a log-linear equation designed to provide the estimated income and work experience elasticity of tourist expenditures. The number of days stayed indicates how much more tourists will spend if their trip is extended for an additional day. Sex is factored in as a dummy variable. The “u” represents the error introduced by variables that are not included and/or cannot be explained by the regression model. The method of Ordinary Least Square was used as the analytic method.

EMPIRICAL RESULTS

Table 1 shows statistical description of United States and Canadian samples. The amount of expenditures and income are in their respective currency, the United States and Canadian dollar. Table 1 reveals that United States visitors spent more money on the average than Canadian visitors did. The standard deviation for expenditures indicates higher variation for American sample than for Canadian. On the average, the Canadian sample is older, has more years of work experience, and stays about half a day longer than those visiting the United States side of the falls.

Table 1
Descriptive Statistics of the Data

American	Canadian
Variable	MeanSt. Dev.# Obs.
Exp	232281.591274247.379
Inc	51934.4238828.859181735.3113253.379
Female	48%-----9149%---79
Wexp	12.812.68514.410.1379
Days	1.64.77911.95.8679
Notes:	
Expc	: total amount of expenditures during their stay in respective currency;
Incc	: total household income per capita;
Female	: percentage of female respondents;
Wexp	: number of years of work experience of respondents;
Days	: number of days visitors stayed in Niagara Falls;

Tables 2 and 3 show the empirical result of both samples, Canadian and American, using OLS technique. Table 2 shows the empirical finding for the Canadian sample. The estimated income elasticity is .32 which is statistically significant with a T-ratio of 2.0667. Thus, if a tourist to the Canadian side of the Falls has an income that increases by 1% their expenditures will increase by 32%.

Table 2 Regression Analysis for Canadian Sample Dependent Variable: Log of Expenditure			
Variable	Estimated Coefficient	t-value	R ² =0.1921
LNINC	0.31857	2.0667	
DAYS	0.39425	3.5605	
SEX	-0.11947	-0.634	
LNWKEXP	-0.03252	-0.331	
EXP	1.2079	0.7072	

The implications of these results are that Canadian tourists will significantly increase their spending by staying for an additional day. As will be shown, however,

if United States tourists stay an extra day the impact is even more significant. In the United States, furthermore, the estimated income elasticity is statistically insignificant. This appears to be the result of the fact that there are a limited number of tourism activities available in the United States and that those that do exist are free (see table 3). The main attraction in the United States is a scenic park that is free (although parking fees are charged). With limited activities available (and the resulting lower levels of spending required), household income ceases to be a determining variable impacting how much the tourists will spend.

Table 3 Regression Analysis for United States Sample Dependent Variable: Log of Expenditure			
Variable	Estimated Coefficient	t-value	R ² =0.4597
LNINC	0.2498	1.3647	
DAYS	0.877	5.5831	
SEX	-0.4682	-1.6099	
NWKEXP	-0.0307	-0.2089	
EXP	1.5427	0.7815	

Thus, United States tourists tend to be “day trippers” who engage in a self-directed tour. And since there is a beautiful park around the falls, tourists can even bring a picnic lunch and not be forced to spend money on food. Thus, in the United States, there is a minimal economic impact from tourism although the number of tourists is high.

The number of days stayed, of course, impacts total expenditures on both sides of the falls. The Canadian side provided a t value of 3.5605 and the American side t values of 5.5831. Thus, the longer tourists stay the more money they will spend. While this is an obvious conclusion, it is important to extrapolate exactly how much more a tourist will spend if they choose to stay an additional day.

If Canadian tourists stay an extra day, they will spend 39% more based on their total trip expenditures. In the United States, tourists will tend to spend about 88% more if they stay an additional day. This increase is significantly higher in the United States because the tourists on the United States are less likely to stay overnight in the first place. Under these circumstances, staying “an additional day” makes a much more profound difference in spending. In other words, if United States tourists spend an extra day their spending almost doubles while the same level

of increased spending is not found in Canada. This is why an additional day being spend by tourists is so vital for the United States tourism industry.

If the United States improves the attractions available, profoundly important additional tourism revenues can be captured because day trippers can be replaced (and/or augmented) by those who spend the night in the region. Since most of the tourism activities in the United States are currently centered around unscheduled self-conducted nature tours of a day-tripping nature, the tourism industry in the United States provides minimal incentives for tourists to stay in the region for any length of time (and spend significant amounts of money). As a result, the economic impact of tourism in the United States remains relatively low.

CONCLUSIONS AND ACTIONABLE SUGGESTIONS

Based on the results of this study, actionable recommendations are made regarding how to boost the tourism industry in the United States. Canada's tradition of providing "activities" has bolstered its tourism industry. Today, with the establishment of casino gambling and its "adult" ambience and reputation, however, alternative tourism opportunities aimed at family and cultural entertainment can provide a lucrative marketing niche for the United States. Family oriented tourist attractions, such as festivals, can increase tourist spending and the tendency for tourists to spend the night in the region. Doing so, incidentally, would mesh with the existing image of the region. Thus, the United States Festival of Lights (held in early winter) is a well-established family activity. Since it take place in winter when the weather is cold and uninviting, however, the festival is able to draw tourists, but not hold them for any length of time or stimulate much economic activity. Nonetheless, the United States can build upon this family-oriented reputation though the establishment of family oriented festivals in the summer months when people can be encouraged to stay longer and spend more.

Further studies with an increased sample size can more precisely explore tourists' expenditures in the region and how spending can be stimulated. Niagara Falls should be (and can be) a strong magnet for significant tourism spending in the United States (as it is in Canada). By targeting upscale tourists looking for family and cultural tourism opportunities, this goal can be achieved.

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