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TOURISTS' PREFERENCES FOR QUALITY OF SERVICES: EMPIRICAL INVESTIGATION OF LESVOS, SAMOS AND CHIOS ISLANDS

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Since tourism is an important source of economic prosperity for Aegean islands, it is interesting to discover the factors affecting the preferences of Greek and foreign tourists to visit and stay on these islands. Using annual data from 1985 to 1996 for the islands of Lesbos, Samos and Chios, the present paper investigates empirically whether quality of services is one of these factors. Specifically, we consider an econometric model drawing from the switching regime literature, to examine causality effects between visitor's preferences for services' quality, the number of Greek and foreign tourists arriving at the islands and the duration of their residence.

Keywords: *switching regime model, quality of services, North Aegean islands*

INTRODUCTION

Indisputably, tourism is considered to be an important factor of economic development for almost all Aegean islands. Generally, the Aegean islands are classified into three categories according to their tourist development stage. In the first category belong Rhodos, Kos, Santorini and Mykonos where tourism plays a dominant role in the economic base of these islands. These islands are in the mature stage of their tourist development. Thus, the problem for these islands is the maintenance of the number of nights spent by tourists through the upgrading of tourist services. The second category includes the islands: Lesbos, Samos, Chios, Paros, Naxos etc. where tourism plays an important but not a dominant role in their economic base. The tourism

industry in these middle-sized islands is in the developing stage. These islands have some tourist infrastructure. Then, many authors propose that the best tourist-developing strategy for these islands is the enrichment of tourist products with new ones, like conference tourism, cultural-tourism, religious-tourism, archeological-tourism etc.

Of course an increase in the number of tourist products requires the necessary technological and material infrastructure and human resources as well.

The third category includes the islands: Milos, Lemnos, Serifos, Karpathos, Ios etc. where tourism has an impact in their economic base. However, these small-sized islands are now entering the tourism industry. For these islands the most appropriate strategies are mainly the production of authentic domestic products, the preservation of the traditional way of living and the exploitation of the unique natural beauty of their environment.

Therefore, the tourist industry in the north Aegean islands Chios, Lesbos and Samos is in the developing stage. Since tourism is an important source of economic prosperity for north Aegean islands, it is interesting to discover the factors affecting preferences of Greek and foreign tourists to visit and stay on these islands. Using annual data from 1985 to 1996 for the islands Chios, Lesbos and Samos, the present paper examines empirically whether quality of services is one of these factors. Specifically, an econometric model drawing from the switching regime literature is used to investigate causality effects between visitor's preferences for services' quality, the number of Greek and foreign tourists arriving at the islands and the duration of their residence. Therefore, the empirical results may provide a response to the question of quality vs. quantity of tourists products as an appropriate developing strategy for the tourist industry of north Aegean islands.

DATA AND MODEL

We use data from 1985 to 1996 for the islands Chios, Lesbos and Samos. The variables included in the data set are: visitor's preferences for quality of services (Q), visitor's number of nights spent (X), real effective exchange rates (RXR), consumer price index (CPI), real gross domestic product index (GDP) and the interest rate (R). The variable Q is defined as the ratio of the number of tourists arriving at first class¹ hotels to the total number of tourists divided by the ratio of the number of beds available in the first class hotels to the total number of beds. Thus,

variable Q is used as an indicator index of tourist's preferences for quality of services since it is implicitly assumed that a tourist arriving at first class hotels prefers high quality of services than low ones. The theoretical model draws for the switching regime literature. Specifically we estimate models where the regression equations depend on a particular regime. These regimes are determined exogenously (known sample separation). Therefore, we consider empirical models where the two regimes are specified, first according to tourists' duration of stay (long or short) and second according to the type of visitor (Greek or foreigner). Then we are looking for the variables affecting the quality of services. The theoretical procedure for the switching regime model with known sample separation is explained below. Letting the subscript g denote the first regime under which the variable Y operates and ng denote the complementary regime, then each observation of the variable Y may be characterized as:

$$Y_i = Z'_{i,g} \beta_g + \varepsilon_{i,g} \quad \text{if observation } i \text{ belongs to } g \text{ regime [1]}$$

$$= Z'_{i,ng} \beta_{ng} + \varepsilon_{i,ng} \quad \text{otherwise [2]}$$

where Z and β are appropriately and conformably dimensioned vectors of variables and parameters corresponding to the structural description of the endogenous variable Y under the two regimes.

To obtain consistent estimates a two-stage estimation procedure is utilized. The structure of the two-stage technique is characterized as:

$$Y_i = Z'_{i,g} \beta_g + \varepsilon_{i,g} \quad \text{if } \gamma' p_i \geq c_i \quad [3]$$

$$= Z'_{i,ng} \beta_{ng} + \varepsilon_{i,ng} \quad \text{otherwise [4]}$$

where $\gamma' p_i$ is a stochastic criterion function of variables p_i and parameters γ determining whether or not observation i belongs to regime g , so that an indicator function " I_i " may be posited such that:

$$I_i = 1 \quad \text{if } \gamma' p_i \geq c_i \quad \text{and the } i \text{ belongs to } g \text{ regime}$$

$$= 0 \quad \text{otherwise}$$

The vector of the coefficients γ can be estimated up to a scale factor by probit methods. It is assumed that the variables $\varepsilon_{i,g}$, $\varepsilon_{i,ng}$ and c_i are normally distributed with zero mean and covariance matrix of the form:

$$\begin{bmatrix} \sigma_g^2 & \sigma_{g,ng} & \sigma_{g,e} \\ \sigma_{ng,g} & \sigma_{ng}^2 & \sigma_{ng,e} \\ \sigma_{e,g} & \sigma_{e,ng} & 1 \end{bmatrix}$$

It follows that $E(\varepsilon_{i,g} \mid e_i \leq \gamma' p_i) = -\sigma_{g,e} \frac{f(\gamma' p_i)}{1 - F(\gamma' p_i)} = -\sigma_{g,e} w_{i,g}$

and in a similar way:

$$E(\varepsilon_{i,ng} \mid e_i \geq \gamma' p_i) = \sigma_{ng,e} \frac{f(\gamma' p_i)}{1 - F(\gamma' p_i)} = \sigma_{ng,e} w_{i,ng}$$

where $f(\cdot)$ and $F(\cdot)$ are respectively the standard normal density function and its cumulant evaluated at its arguments [see Maddala (1983) p. 224].

Thus equations [3] and [4] may be written as:

$$Y_i = Z'_{i,g} \beta_g - \sigma_{g,e} w_{i,g} + u_{i,g} \quad \text{for} \quad I_i=1 \quad [5]$$

$$= Z'_{i,ng} \beta_{ng} + \sigma_{ng,e} w_{i,ng} + u_{i,ng} \quad \text{otherwise} \quad [6]$$

where the residuals u are implicitly related to the residuals ε in equations [3] and [4].

The two-stage method utilizes probit analysis in the first stage and a least squares procedure in the second stage. Specifically, in the first stage probit estimates of γ permit establishing values for w_g and w_{ng} for each i via evaluation of the functions f and F . In the second stage, the equations [5] and [6] are estimated by weighted least squares since the residuals u are not necessarily homoskedastic. This procedure provides consistent estimates of the parameters. It should be pointed out that if there is no correlation between e and ε_g , ε_{ng} and the variable Y does not appear in the vector p , the switching process may be thought of as exogenous. Therefore, if the estimates of $\sigma_{g,e}$ and $\sigma_{ng,e}$ are not significantly different than zero this implies that Y does not cause p and thus p may be interpreted as independent of Y . Consequently the individual regimes may be estimated as two independent regression equations provided there is no restrictions across equations that need to be taken into account.

EMPIRICAL RESULTS

We estimated the following empirical models related to different regimes:

Empirical model I

Trying to examine whether tourist's preferences for quality of services influences the number of nights spent by a tourist, we used the following empirical model².

Regime 1: Long duration of stay³ i.e. $I = 1$

$$Q = 0.03R - 0.24CPI + 1.24GDP - 0.013W_g \quad [7]$$
(2.55) (1.91) (4.78) (0.14)

Regime 2: Short duration of stay i.e. $I = 0$

$$Q = 2.07CPI + 0.24W_{ng} \quad [8]$$
(7.61) (1.01)

The probit estimation of the duration of stay decision function yields:

$$I = -4.33D + 21.46R_{XR} + 5.37CPI - 28.46GDP + 0.32R \quad [9]$$
(5.22) (2.48) (3.24) (2.87) (2.47)

where D is a dummy variable which is equal to 1 for Greek tourist and zero for foreign tourist. The empirical results suggest that foreigners are more likely to stay longer in the islands. An increase in the economic variables R_{XR} , CPI and R increases the probability for extended stay of tourists in the islands. On the other hand GDP has a positive impact on the probability of short visit.

From the empirical estimates of equation [7] and [8], we conclude that for those tourists who stay for a long period the variables R and GDP influence positively their preferences for quality of services. The opposite holds true for CPI . However, CPI has a positive effect on preferences for quality for those who stay for a short period.

More importantly, the coefficients of W_g and W_{ng} are statistically insignificant. This implies no causality effects from Q to decision to stay. This empirical evidence supports the opinion of those who believe that the main strategy for the north Aegean islands is the increase in the number of tourists through the increase in the variety of tourist products available.

Empirical model II

Here, we investigate whether visitor's preferences for quality affects the type of tourist (i.e. Greek or foreigner) arriving at the islands.

The two-stage estimation procedure yielded the following results:

Regime 1: Greek tourist i.e. $I = 1$

$$Q = 1.88GDP - 0.6CPI + 0.14W_g \quad [10]$$
(1.96) (2.3) (0.17)

Regime 2: Foreign tourist i.e. $I = 0$

$$Q = 0.32CPI + 2.64W_{ng} \quad [11]$$
(2.96) (16.1)

The probit estimation of the visitor's type function is:

$$I = -0.06X \quad [12] \\ (3.00)$$

The empirical result of equation [12] implies that a prolong stay in the islands is most likely to come from a foreign tourist. The empirical findings of equations [10] and [11] revealed that Greek tourist's preferences for quality is positively affected by income and negatively by inflation. However, inflation has a positive impact on foreign tourist's preferences for quality.

Finally, the empirical evidence suggests that preferences for quality matters only for foreign tourists. This implies that it is appropriate for a tourist policy to target in the increase of the value added in foreign tourism. Of course this could be done through improvements in the quality of the tourist services.

CONCLUSIONS

In this paper, an empirical model drawing from the switching regime literature has been used to investigate, firstly, if visitor's preferences for quality of services affect visitor's duration of stay. We found no evidence of causality effects. This finding supports the views suggesting an increase in the variety of tourist products to attract more (particularly Greek) tourists. Secondly, we examined whether preferences for quality affect the type of tourist arriving at the islands. We found no evidence of causality effects for Greek tourists. However, there was an evidence that preferences for quality is a factor underlying foreign tourists visiting the islands. This implies that not only an increase in the variety of tourist products but also the issue of value added in (foreign) tourism must be taken into consideration.

Therefore, a combination of strategies through the increase in the variety of tourist products to attract more (Greek) tourists and the increase in quality of services, will finally increase the profitability of the tourist sector in north Aegean islands.

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ENDNOTES

1. First class hotels means the highest category of hotels available in the islands. This includes hotels of B category from 1985 to 1990 for all islands, A and B category from 1991 to 1996 for Chios and Samos, Luxury and A and B from 1992 to 1996 for Lesbos.
2. Values of t statistic are in parentheses.
3. Long duration of stay means the values of X exceeding its median.

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