Strategic Segmentation: An Empirical Analysis of Tourist Expenditure in Turkey

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This article presents a methodology to aid strategic planners in analyzing segment attractiveness. The methodology involves using country of origin as the primary segmenting variable and a number of demographic and behavioral characteristics as secondary segmenting variables. The methodology is quite flexible and quantitatively robust. The methodology is illustrated through an application to country-of-origin–based tourist expenditure in Turkey, and target segments for promotional strategies are identified.

Despite the continued dominance of mass tourism offerings in Europe, North America, and the Far East, there are clear indicators that more tailored offerings will be required in the future. Differentiated offers, even within the broad context of what might be called mass tourism, are likely to become increasingly important to a consumer marketplace that is ever more sophisticated in its travel experience and expectations (Ritchie 1991). Tourism operators have an increasingly complex range of supply options at their disposal that they can use to meet specific tourism needs.

Therefore, it is vital that all tourism planners and strategists, from single operators to multinational lodging or airline businesses and those who are responsible for national or regional concerns, are able to use all possible information sources and mechanisms to identify new market potential and to understand their existing markets better and maximize the yield from their finite marketing budgets. This article presents a way to generate strategic insights from national historic arrivals data by examining tourist expenditures on the basis of demographic variables, such as nationality, age, and occupation, and behavioral variables, such as choice of type of accommodation. A better understanding of expenditure patterns can help to clarify the attractiveness of previously identified tourist segments.

The focus is on a scenario where destinations compete to attract tourists. The management decisions that can be supported by the methodology are those of national and regional tourism boards and of corporate officers with destination-specific responsibilities.

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In the context of strategic management (see, for example, Porter 1985, chapter 7), segmentation analysis can be set up as a sequence of steps, the end result of which is the choice of the enterprise's strategic scope. It is therefore seen as a precursor to the formulation of implementable strategies. The methodology developed in this article focuses specifically on two of the steps within strategic segmentation analysis, the construction of a segmentation matrix and the analysis of segment attractiveness or profitability within the overall demand pattern for the product. This does not, in and of itself, result in identifying success factors or strategic scope, but it is an essential prerequisite for such analysis.

Several other approaches to segmentation are possible. Factor-cluster segmentation (Kendall 1980, chapters 4 and 10) and neural network approaches (Eberhard and Dobbins 1990; Smalz and Conrad 1994) are only two alternative technical methodologies that may be used. However, the strength of such methods lies in their ability to identify segments, which is not the principal focus of this article. Instead, we use segments drawn up from reviewing practitioner materials with the objective of assessing their validity. Furthermore, we seek to analyze segment attractiveness.

The literature on strategic segmentation in tourism has developed from wider analysis of consumer behavior in areas of discretionary consumption. Early classifications of tourists, from which segmentation was derived, were largely conceptual and descriptive and, of these, Cohen (1974), Plog (1974), and Smith (1977) are perhaps the best known. These approaches were followed by rather more empirical studies of tourist types and tourist behavior. Examples in this category include Westvlaams Ekonomisch Studiebureau (1983 and 1986), Shih (1986), and Plog (1987). Indeed, the literature on segmentation in tourism has grown extensively to incorporate a variety of empirical approaches, as well as conceptual consideration of a number of demographic, lifestyle, and psychographic segmentation bases and combinations of these approaches. The extensive literature in this field is well reviewed in a number of publications, for example by Moutinho (1982), Brayley (1993), Mazanec (1994), Vanhove (1995), Lawson (1995), and Weber (1995). Perhaps the main

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inadequacy of the approaches considered in this body of literature is that, with the notable exception of Plog, they tend to consider tourism behavior in relation to specific tourism product types, whether it is sun, sea, or sand; heritage or cultural experiences; or cruising.

This article uses Turkey as a case study for the purposes of analysis. However, the methodology is universally applicable, provided that reliable and sufficient data are available. The proposed methodology is merely a specific means of analyzing the data in the segmentation matrix, given an underlying segmentation analysis.

Turkey, however, does provide an interesting case study in that its inbound tourism industry is relatively new and has witnessed rapid growth in the period since 1980 (Cooper and Ozdil 1992). Data collection on all aspects of tourism activity, parallel to this growth, has been rich and detailed and thus has facilitated the execution of this study. The period of this analysis also straddles a period of considerable volatility in Turkey's tourism performance, which was greatly influenced by the European recession and the Gulf War in 1991. This allows the methodology's robustness to regime changes to be demonstrated to good effect.

STRATEGIC SEGMENTATION

Before proceeding further, it is worthwhile to place our methodology in the context of the overall managerial decision process. In the analysis of interregional and international tourist flows, destinations are in competition with one another. While the managers in charge of competition strategies in destinations are often government officials, the management principles that underlie their actions are the same as those for more conventional managers.

Classical segmentation analysis in strategic management proceeds through five steps (Grant 1995):

(1) Identification of key segmentation variables and categories,
(2) Construction of a segmentation matrix,
(3) Analysis of segment attractiveness,
(4) Identification of key success factors in each segment, and
(5) Analysis of attractions of broad versus narrow segment scope.

In this article, we focus on steps 2 and 3. Our basic premise is the segmentation of tourists first by geographic region and second by identifiable subgroup characteristics, as is standard in the strategic management literature (Mintzberg, Quinn, and Ghoshal 1995). This analysis differs from conventional market segmentation analysis only in terms of emphasis. Since the analysis is strategic, the study is aimed at identifying success factors and determining strategic posture (broad versus narrow scope). In contrast, conventional market segmentation analysis is more interested in using the results of the exercise to design a successful marketing plan. Thus, strategic segmentation often has a more macro focus than conventional segmentation analysis.

In step 1, we use key segmentation variables drawn from a review of practitioner materials. The primary segmentation variable used by many tourism authorities appears to be country of origin, with visitor characteristics used as secondary variables. Baum (1994) provides some evidence of this for Austria and Ireland. Further evidence can be found for Cyprus in the Cyprus Tourism Office's 1993 report, for Taiwan in its tourism bureau's publication (1994), and for Singapore in Cheong and Khem (1988).

FIGURE 1

THE UNDERLYING SEGMENTATION MATRIX

		COUNTRY-OF-ORIGIN				
		1	2	3	4	etc.
VISITOR CHARACTERISTICS	1					
	2					
	3					
	4					
	etc.					

Step 2 of the analysis involves constructing a segmentation matrix. The primary and secondary segmentation criteria are used to construct a two-dimensional matrix. The quantitative estimation is based on an underlying segmentation matrix of the form found in Figure 1. Step 3 analyzes segment attractiveness. Each cell in this matrix represents a distinct market niche and each has profit potential that can be developed. Analyzing the matrix should identify those segments that have the greatest profit potential from the manager's perspective. This is the main objective of this article.

Once the attractive segments have been identified, step 4 points out the key success factors in these segments. Step 5 assesses the extent to which synergies exist (implying broad scope) or do not exist (implying narrow scope) among segments. The application of this analysis to the results of the estimation reported in this article is the next logical stage in the management decision process. Strategies can now be devised and implemented to most effectively develop the segments identified by the segmentation analysis.

DATA AND METHODOLOGY

Data

The article uses a data set that was assembled from several sources. The major source is the primary archive of foreign visitor data maintained by the Tourism Board of the Government of Turkey, which is generated on the basis of in-depth exit questionnaires filled out by approximately 30% of all departing visitors. (The number of respondents rose from 1.24 million in 1988 to 1.54 million in 1993.) The archive includes exhaustive figures for tourist expenditure and visitor characteristics, categorized for 33 countries and country-groups. (The countries and country-groups in the data set are reported in Table 1, along with tourist arrivals data.) Obviously, the identity of individual tourists varies from year to year, as would be the case with any panel of consumers. This is typically argued to be a strength, since individual idiosyncrasies can then be averaged out, sharpening the effects of the measurable components (Cook and Campbell 1979).

These data are augmented by data taken from the *World Development Report,* published by the World Bank, and from *International Financial Statistics,* published by the International Monetary Fund. The complete data set is assembled for the years 1988 through 1993, yielding a six-year panel. Overall, the resulting data set is unusually comprehensive.

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TABLE 1

TOURIST ARRIVALS IN TURKEY: ORIGINATING COUNTRIES AND REGIONS

	Arrivals					
Country	1988	1989	1990	1991	1992	1993
Australia	27,724	33,428	40,703	29,442	23,752	25,856
Austria	117,568	155,224	181,049	146,559	190,119	193,244
Belgium	36,779	44,502	56,155	56,245	58,204	68,473
Canada	29,637	31,865	34,912	23,163	13,006	17,469
Denmark	29,467	32,636	34,529	48,534	55,416	67,334
Finland	49,628	69,374	102,182	82,099	87,835	83,805
France	225,685	290,401	304,770	233,675	176,039	212,592
Germany	751,598	900,026	927,804	935,667	1,027,757	951,820
Greece	422,742	273,131	230,695	193,113	108,934	109,678
Holland	80,332	106,827	145,920	154,246	178,122	192,786
Iran	248,057	250,397	266,723	187,842	145,559	117,951
Israel	25,838	52,475	44,862	54,118	41,968	82,902
Italy	138,553	155,643	156,261	119,284	107,376	79,484
Japan	29,044	32,415	40,732	34,601	30,988	37,216
Kuwait	14,402	15,097	10,594	8,810	5,525	5,053
Libya	100,034	52,718	25,006	29,484	10,834	8,462
New Zealand	8,559	9,246	13,579	8,060	5,489	5,975
Norway	21,035	25,785	36,005	37,646	39,650	49,744
Poland	173,824	178,594	198,628	123,988	106,556	43,230
Saudi Arabia	32,671	30,867	17,986	21,336	15,947	18,732
Spain	50,546	52,471	65,651	42,532	25,847	34,044
Sweden	39,936	70,358	98,383	87,084	123,469	75,392
Switzerland	64,653	77,638	80,265	71,924	64,383	73,159
Syria	84,606	92,429	113,082	111,006	121,023	121,081
United Kingdom	459,370	400,344	332,190	336,176	238,961	341,630
United States	164,854	206,098	206,728	145,545	84,646	120,769
Yugoslavia	294,558	200,645	341,316	215,630	148,856	170,173
O/Western Europe	23,355	31,801	35,711	31,406	34,066	29,325
O/Eastern Europe	118,842	281,102	866,445	1,375,178	2,578,912	1,712,935
O/Africa	106,858	103,905	68,341	69,897	48,799	56,989
O/Western Asia	123,439	135,704	127,501	111,831	133,627	65,563
O/Asia	30,733	50,831	76,736	40,993	10,040	44,346
South America	21,636	33,261	37,818	24,241	13,623	21,246

Methodology

The basic objective of the article is to estimate a quantitative strategic segmentation model to explain tourist expenditures. The primary segmentation variable is the commonly used country of origin, based on the fundamental assumption that expenditure propensities are determined in part by sociocultural factors that may be proxied (perhaps crudely) by nationality. The assumption itself is not critical, as we are able to test whether it is supported by the data.

Within the primary panel, 10 secondary segmentation variables are used to represent a wide variety of visitor characteristics. This part of the analysis is based on the assumption that tourist expenditure is representative of demand. Higher expenditures are associated with a greater demand for tourism services, which may be measured either qualitatively or quantitatively. Thus, both a purchase of more nights at the same hotel and the purchase of the same number of nights at a higher quality hotel would be registered as an increased demand for hotel services. Expenditure then functions as a common denominator. It is hoped that the estimation results will aid in cataloging visitor characteristics that are associated with high demand.

The basic model to be estimated follows an established procedure in the literature (see Barten 1977 and Bakkal 1991), which suggests that utility-maximizing expenditure on a particular good or service may be considered to be a function of three factors: sensitivity to relative prices (P), income (I), and identifiable subgroup characteristics (X). The expenditure function may therefore be written as

$$E_i = f\,[\,P, I, X\,], \tag{1}$$

where the three entries in the function may be defined as vectors.

This model is based on an argument with two theoretical steps. The first is the two-stage maximization process, where it is shown that when the utility function is homothetic and separable, selecting a utility-maximizing budget is identical to independently selecting sub-budgets for commodity groups (see Blackorby et al. 1970). In other words, subject to these conditions, an individual's sub-budget for tourism expenditures may be meaningfully estimated.

The second step involves following Barten (1977) and Phlips (1974), who note that aggregation bias is empirically unimportant. Therefore, it is possible to aggregate individual tourism sub-budgets to obtain a sub-budget for a large group of individuals, which, in turn, means that the aggregate tourism sub-budgets relating to countries and country-groups may be meaningfully estimated. (It must be borne in mind that the aggregation referred to is the aggregation of single individuals into identifiable and usable segments.)

The basic exercise involves estimating equation (1). We begin by defining the measures used to represent the variables in the theoretical microeconometric specification. The dependent variable is described as

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TRINC = the total expenditure per visitor day, including a fraction of the travel-related expenditure made outside Turkey.

The regressors are defined as follows:

price proxy (PR) = the percentage of visitors who stated that price was their main consideration for choosing to visit Turkey (rather than another destination). We expect this variable to capture the relative effects of home country prices, prices in competing destinations, and prices in the destination chosen (Turkey). (A detailed discussion of the use of price indices in this context is available in Martin and Witt [1987].)

income proxy (INC) = the national per capita income as reported by the World Bank. We expect this variable to capture the relative incomes of tourists from different originating countries.

The identifiable subgroup characteristics are made up of a number of behavioral and demographic variables (most of them normalized for purposes of comparability), as defined below.

NTS = the average number of nights spent in Turkey during the visit,
HOTL = the percentage of visitors who stayed in registered hotels (rather than guest houses, campsites, etc.),
WCR = the percentage of visitors who hold white-collar jobs,
SEMP = the percentage of visitors who are self-employed,
LTOUR = the percentage of visitors who are leisure tourists,
BTOUR = the percentage of visitors who are business tourists,
AGE = the average age of visitors, and
ISDUM = a dummy variable taking the value of unity for major originating countries that are Islamic.

ESTIMATION AND RESULTS

Estimation

We use countries and country-groups as our primary segmentation variable, and we set up a 33-item panel, with a time series of six observations in each stratum. This gives a total of 198 observations in the panel. We use ordinary least squares (OLS) as our baseline model, which provides null hypothesis estimates. These are generated under the OLS assumption that the primary segmentation variable, namely country of origin, has no statistically significant impact on tourist expenditure, once the other variables in the estimating equation (1) are taken into account.

We estimate two panel data models, the fixed effects model (FEM) and the random effects model (REM). As is well-known (see, for example, Mundlak 1978), the FEM is based on the assumption that the differences between the strata are captured by different constant terms, while the REM is based on the assumption that each stratum has a different additive variance term. In other words, the FEM assumes that the strata differ in terms of their conditional means, while the REM assumes that the strata differ in terms of their conditional variances. (The estimation of the FEM merely involves estimating a partitioned OLS model, while the estimation of the REM requires using two-step feasible generalized least squares [FGLS]. See Greene [1993].)

As the countries differ considerably in terms of visitor arrivals and expenditures, the OLS model was tested for heteroscedasticity. The Breusch-Pagan (1979) test yielded a $\chi^2(10)$ value of 19.7973, which is statistically significant at the 5% level. This suggests that heteroscedasticity is a problem. To deal with this, both the OLS and panel models were weighted by the number of visitor arrivals. The Breusch-Pagan (1979) test was reapplied to the weighted models, and the results indicated that the hypothesis of homoscedasticity may be accepted.

The estimates are shown in Table 2. All models fit the data fairly well. However, when we tested for panel (i.e., country of origin) effects, we found that the OLS model, which is based on the absence of such effects, was rejected when tested against either the FEM or REM models. Thus, we may conclude that we have fairly strong evidence in favor of country-of-origin effects on tourist expenditure levels.

TABLE 2

TOTAL EXPENDITURE PER VISITOR PER NIGHT: REGRESSION RESULTS

Regressor	OLS Estimates	Panel Estimates: Fixed Effects Model (FEM)	Panel Estimates: Random Effects Model (REM)
CONSTANT	974.74 (4.12)[a,b]	—	1069.1 (4.27)[a]
PR	−7.458 (4.94)[a]	−4.172 (2.34)[a]	−4.347 (2.89)[a]
INC	11.318 (4.37)[a]	45.446 (5.12)[a]	11.868 (3.92)[a]
NTS	26.243 (5.05)[a]	−4.116 (0.56)	5.862 (0.97)
HOTL	1.194 (0.74)	23.543 (2.15)[a]	0.473 (0.33)
WCR	−7.645 (3.55)[a]	−4.604 (1.44)	−7.178 (2.92)[a]
SEMP	−1.341 (0.84)	2.200 (3.17)[a]	2.519 (2.55)[a]
LTOUR	1.901 (1.14)	3.923 (3.07)[a]	5.290 (2.90)[a]
BTOUR	3.590 (1.27)	4.201 (2.69)[a]	4.060 (1.41)
AGE	−15.191 (3.58)[a]	−14.762 (2.43)[a]	−19.239 (4.24)[a]
ISDUM	85.497 (1.61)	−26.011 (0.00)	39.724 (0.52)
Diagnostics			
Adj. R^2	0.6129	0.7479	0.6952
F-statistic	32.186	14.912	—
(d.f.)	(10,187)	(42,155)	
S.E. of residuals	156.116	125.989	139.877
Tests for Panel Effects			
Likelihood ratio test: FEM vs. OLS, $\chi^2(32)$; (p-value)[b]		122.066 (0.00)	—
Breusch-Pagan LM test: REM vs. OLS, $\chi^2(1)$; (p-value)		—	25.688 (0.00)
Hausman test: FEM vs. REM, $\chi^2(10)$; (p-value)		37.903 (0.00)	

[a] Coefficients significant at the 5% level.
[b] t-statistics shown in parentheses.

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These tests also suggest that the OLS estimates of significant visitor characteristics may be unreliable.

Next we tested the panel models against each other, using a Hausman (1978) test. We found that the REM is conclusively rejected in favor of the FEM. Thus, we may conclude that the country of origin effect expresses itself in terms of mean expenditure, rather than in the form of dispersion. We therefore concentrate on the estimates of visitor characteristics obtained from the FEM in Table 2. The actual fixed effects are shown in Table 3.

Results

We present the most striking results of the estimation below.

- The price proxy is strongly negatively associated with expenditure, lending some support to the idea that the underlying demand is elastic.
- The income proxy is strongly positive, suggesting that the tourists' incomes are representative of the levels in their originating countries. Indeed, income has the strongest effect on expenditure of all the visitor characteristics that were considered.
- The percentage of visitors staying in registered hotels has a strong and statistically significant effect on expenditure. The magnitude of this effect is second only to that of income.
- The percentage of self-employed visitors has a positive and significant effect on expenditure, albeit a rather small one. The income distribution of self-employed individuals tends to be bimodal, with a cluster of low-earners and a cluster of high-earners. This suggests that, on average, Turkey draws from the high-earner cluster, in contrast to other destinations in the western Mediterranean.
- Contrary to many claims in the tourism literature, average age is consistently negatively related to expenditure; the effect is strong and significant. This result merits some discussion. The average age of tourists in terms of the primary country-of-origin segmentation varies from lows in the early 30s to highs in the late 40s. Thus, the result would seem to indicate that, in the case of Turkey, the visitor profiles are dominated by those in their peak earning years and those who are retired, with the former spending more. This is in contrast with destinations like Bermuda (Archer 1992). This has implications for the type of holiday offerings that Turkey tourism officials should develop and market.
- The percentage of white-collar visitors seems negatively related to expenditure, but the effect is not statistically significant. This variable was inserted to pick up the effects of occupational stability.
- The Islamic dummy is insignificant, suggesting that expenditure patterns of visitors from Islamic countries are no different from those from non-Islamic ones.

TABLE 3

THE FIXED EFFECTS MODEL (FEM): ESTIMATION OF FIXED EFFECTS

Country	α_i	s.e.(α_i)	T-Stat
Australia	564.138	373.232	1.511
Austria	1026.470	309.761	**3.314**
Belgium	435.868	366.458	1.189
Canada	399.790	396.221	1.009
Denmark	816.735	372.122	**2.195**
Finland	702.533	328.822	**2.137**
France	376.003	397.825	0.945
Germany	262.456	408.107	0.643
Greece	806.683	317.007	**2.545**
Holland	447.462	376.451	1.189
Iran	1045.650	243.511	0.004
Israel	1069.040	243.511	0.004
Italy	508.212	380.549	1.335
Japan	1270.650	315.730	**4.024**
Kuwait	551.425	243.511	0.002
Libya	969.384	243.511	0.004
New Zealand	211.644	418.585	0.506
Norway	1161.370	321.985	**3.607**
Poland	345.074	399.885	0.863
Saudi Arabia	772.983	386.932	**1.998**
Spain	835.884	353.584	**2.364**
Sweden	1178.870	327.112	**3.604**
Switzerland	1263.260	341.837	**3.696**
Syria	1053.170	243.511	0.004
United Kingdom	518.134	393.76	1.316
United States	843.582	290.167	**2.907**
Yugoslavia	498.372	426.253	1.169
O/Western Europe	206.777	383.838	0.539
O/Eastern Europe	39.626	391.214	0.101
O/Africa	286.083	406.183	0.704
O/Western Asia	–45.43	444.054	–0.102
O/Asia	93.6477	401.069	0.233
South America	605.658	351.748	**1.722**

Concerning the country-of-origin fixed effects shown in Table 3, we note the following important results:

- Japan and Switzerland seem to have the highest country-specific fixed effects (α_i) in terms of tourist expenditure in Turkey. This reinforces findings from an earlier study of Turkish inbound tourism (Baum and Mudambi 1996). These countries are followed by Austria, the Scandinavian countries, and the United States. All of these fixed effects are statistically significant as well, indicating that the tourists from these countries have a significantly high mean of spending in Turkey. Promotional efforts in these countries are likely to yield the greatest return.
- Virtually all large fixed effects are significant, while most of the smaller fixed effects are not. This reflects stability in the overall conditional variance, as would be expected in the FEM (i.e., the variability of the mean spending is roughly the same for tourists from all originating countries). An exception to this is Libya, which has a large fixed effect that is not statistically significant. The arrivals data in Table 1 indicate that this may be traced to the step decline in Libyan tourist arrivals over the period covered in the sample.

CONCLUSIONS

The objective of this article is to illustrate a methodology for analyzing the attractiveness of important segments in a country or region's inbound tourist market. While the particular data set used pertains to Turkey, the methodology, in principal, should be applicable to any destination.

The methodology involves setting up a panel data set with originating countries or areas as the primary segmentation

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variable and then using various visitor characteristics as secondary variables. The precise choice of originating regions or countries and visitor characteristics will depend on the destination chosen and the availability of data. The basic methodology is fairly flexible in this respect; the construction of the segmentation matrix in Figure 1 can be adapted to any destination.

We were able to pinpoint a number of originating countries as important for Turkey in terms of the average daily amount spent. We were also able to point out some segments within these countries and country-groups that are particularly valuable, such as the self-employed, those in the 30 to 45 age group, and those choosing registered hotel accommodation.

We should note that strategic segmentation, even when complete, only provides directional guidance for the manager. For the successful implementation of a segmenting strategy, the use of more micro level data is necessary. Thus, strategic segmentation based on the methodology described in this article must be seen as a precursor to conventional segmentation analysis carried out at the operational level.

Finally, we should contrast our results with those reported in Baum and Mudambi (1996), which used a smaller data set (1989 and 1990 only). They also used a simultaneous equation estimating procedure, as opposed to the panel approach used here. Our results in this study reinforce many of the findings of this earlier study. In particular, we find that Japan and Switzerland are important originating markets for Turkey. However, with our richer data set, we are able to uncover several more important originating markets. Furthermore, the Islamic dummy was found to be extremely important in the earlier study. This was primarily based on the data from three countries: Saudi Arabia, Libya, and Kuwait. In the post-1990 world, all three have been hard hit by the declining world price of oil, which has caused a considerable decline in the per capita income in Saudi Arabia. In addition, Libya has been affected by sanctions in the wake of the Gulf War, which has also had an influence on Kuwaiti outbound tourism.

As with any statistical technique, the main limitation of this technique is the availability of reliable data. This problem becomes acute in many developing countries, where tourism promotional budgets are small and data are scarce. Furthermore, even when data are available, the statistics that are collected tend to reflect current tourist flows. For example, in the case of Turkey, all visitors from South America are lumped into a single category, so the attractiveness of the different originating countries on the continent cannot be assessed.

A fruitful avenue for further research would be to proceed from the current results to identifying success factors in individual attractive segments. The next objective would be to address the question of strategic scope in the context of maintaining and enhancing tourist flows.

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