This is the accepted manuscript of the article:
Park, S., Nicolau, J. L., & Fesenmaier, D. R. (2013). Assessing advertising in a hierarchical decision model. *Annals of Tourism Research*, *40*, 260-282.
https://doi.org/10.1016/j.annals.2012.09.009

ASSESSING DESTINATION ADVERTISING USING A HIERARCHICAL DECISION MODEL

ABSTRACT: Many destination marketing organizations in the United States and elsewhere are facing budget retrenchment for tourism marketing, especially for advertising. This study evaluates a three-stage model using Random Coefficient Logit (RCL) approach which controls for correlations between different non-independent alternatives and considers heterogeneity within individual's responses to advertising. The results of this study indicate that the proposed RCL model results in a significantly better fit as compared to traditional logit models, and indicates that tourism advertising significantly influences tourist decisions with several variables (age, income, distance and Internet access) moderating these decisions differently depending on decision stage and product type. These findings suggest that this approach provides a better foundation for assessing, and in turn, designing more effective advertising campaigns.

Keywords: Tourism advertising; hierarchical tourist decision making; random coefficient logit (RCL) model, destination marketing organization

1. INTRODUCTION

Tourism advertising is regarded as one of the most influential information sources for prospective and current visitors (Burke & Gitelson, 1990; Kim, Hwang, & Fesenmaier, 2005; Gretzel, Yuan, & Fesenmaier, 2000; USTA, 2011). Recently, many tourism destination organizations (DMOs) in the United States and elsewhere have been challenged by state budget cuts which have led to strong pressure to defend funding for destination-specific tourism advertising (Papatheodorou, Rossello, & Xio, 2010; Ritchie, Molinar, & Frechtling, 2010; Spring, 2010; USTA, 2011). Indeed, USTA (2009, 2011) reported that the average state tourism office budget in the United States for 2009 is $353 million, which represents a 3.5 percent decrease as compared to the previous fiscal year, and is the first time in the past five years that the growth of the annual tourism budget has declined. Kim McClelland, Chairman of the Utah Board of Tourism, in discussing the challenges facing tourism promotion said: “I think what will happen is we'll have to spend the money even smarter than we have in the past… I think all the states across the country, I just have to believe, are dealing with similar budget challenges” (Gainesville.com, 2008). This economic situation facing travel agencies clearly demonstrates that the estimation of advertising effects on tourist behavior remains a crucial research challenge for tourism researchers (Shields, 2006; USTA, 2011).

A number of approaches have been proposed to assess the effectiveness of advertising including conversion analysis (Burke & Gitelson, 1990; Hunt & Dalton, 1983), advertising tracking (Siegel & Ziff-Levine, 1990), true- and quasi-experimental design (Mok, 1990; Woodside, 1990), econometric modeling (Butterfield, Kubursi, & Deal, 1998; Wöber & Fesenmaier, 2004) and aggregated buyer-purchase modeling (Kulendran & Dwyer, 2009). Each of these approaches has been shown to have their own strengths and weaknesses. Importantly, most of these advertising evaluation strategies focus attention on a single type of

tourist decision, destination choice. It is argued in this study that tourist decision making and therefore advertising evaluation is much more complex in that it entails a number of sub-decisions (i.e., facets) besides destination including accommodations, length of trip, travel party, attractions, and activities (Eymann & Ronning, 1992; Fesenmaier & Jeng, 2000). Further, it is argued that tourist decision making is a hierarchical process in that the sub-decisions in the hierarchy are contingent on other facets which comprise the overall trip (Dellaert, Borgers, & Timmermans, 1996; Fesenmaier & Jeng, 2000). Therefore, even though some tourists might skip some stages in their decision process depending on their experience (Petrick, Li, & Park, 2007), it is generally agreed that the choice of destination plays the role of conditioning later decisions (e.g., accommodation, shopping, activities and attractions). Finally, the tourism literature indicates that the different tourist decisions have different levels of complexity (Nysveen, 2003; Fesenmaier & Jeng, 2000) depending on the products or services concerned which, in turn, leads to different information search strategies. Thus, this research suggests that studies evaluating the effectiveness of destination advertising should reflect the hierarchical decision making process and that the factors effecting advertising response (i.e., decisions regarding the purchase of tourism products and services) will differ according to the product type (i.e., destination, hotel, restaurant).

Based upon this literature, this study examines the effects of print and online advertising requested and read/or viewed by individuals, whereby it is first assumed that the tourist decision is a sequential process and that the decision to visit a particular destination provides the foundation for all other tourist-related decisions. After making the destination decision, it is further assumed that he/she may or may not consider tourist-related products promoted in the respective advertising such as accommodations, restaurants, and activities at the destination (e.g., the second stage in the model). Based upon these two assumptions, the differential influence of advertising on each of these two sets of decisions is examined. In

addition, this study considers four characteristics (as interaction effects) of tourists that have consistently been found to moderate their travel planning process: age, annual income, distance (in-state, adjacent and outer states) and Internet use (Woodside & Lysonski, 1989; Gretzel, Hwang, & Fesenmaier, 2006).

2. ADVERTISING RESPONSE IN A MULTISTAGE DECISION PROCESS

Destination marketing is an important tool for stimulating demand (Crouch, 1994; USTA, 2011). Woodside and his colleagues have conducted a number of studies examining alternative strategies for destination marketing (Woodside & King, 2001; Woodside & MacDonald, 1994; Woodside, McDonald, & Trappey, 1997). Importantly, Woodside and Dubelaar (2002) propose a general theory of tourism consumption and conclude that advertising and the information it contains helps tourists form positive perceptions of the destination and increases tourist expenditures in the destination visited. Woodside and King (2001) argue that marketing activities such as advertising are often catalysts to activate tourists' choice sets that ultimately influence their destination decisions. They conclude that destination marketing programs affect the choices made for the trip during the decision steps, which include collecting information, evaluating it according to a set of rules, and developing intentions regarding choice of destination to visit.

Beyond Woodside and his colleagues, a number of studies have been conducted to evaluate the impact of destination advertising (Burke & Gitelson, 1990; Kim et al., 2005; McWilliams & Crompton, 1997; Wöber & Fesenmaier, 2004). Importantly, these studies focus singularly on destination choice and fail to recognize travel is complex and follows a hierarchical process (Dellaert et al., 1996; Jeng & Fesenmaier, 2002). That is, tourists are required to consider a number of inter-related decisions/facets including travel destination(s), activities, accommodations, restaurants, attractions, length of trip, activities when planning a

trip. Indeed, it is clear from a review of the promotional literature (including destination websites) provided by destination marketing organizations, they implicitly recognize the complexity of the tourist decision making process by offering information about a wide range of activities related to the destination (Gretzel et al., 2000). Thus, this study argues that in order to estimate the responsiveness of tourists to destination advertising, it is imperative to consider the various facets reflected in the hierarchical stages of the travel planning process.

A three-stage model is proposed (see Figure 1) whereby the first stage considers whether or not the tourist visited an advertised destination; the second decision relates to the purchase of tourism products featured in the advertisement; and, the third stage considers the specific types of advertised products. It is also argued that individuals who choose to visit that targeted destination in the first stage go on to a second stage whereby they decide whether or not to 'purchase' advertised items. Further, it is proposed that people who choose to buy advertised items in the second stage are implicitly opting for one or several advertised items (third stage). The third decision is considered an important "refinement" of the second decision in that it enables us to examine empirically the differential influence of advertising and should be considered more of a complementary aspect of the model than a behavioral expectation and therefore, it is argued that the second and third decisions *do not necessarily* follow a sequential process. Thus through this three-stage process, the model can be used to estimate the "global" effect of advertising on the items available at the destination (second stage) and the "individual" effect of advertising on the particular item (third stage). Therefore, it is argued that this process can be used to measure the differentiated impact of advertising on both the "destination decision" (first stage) and the "items, as a whole, at the destination (second stage)", where the third decision is seen as a refinement of the second decision.

Figure 1 about here

2.1. Hypotheses

The tourism literature suggests that tourist decisions include different levels of complexity depending on the different types of products that tourists make decisions (Beldona, Morrison, & O'Leary, 2005; Nysveen, 2003). For example, flights, accommodation and car rentals are regarded as standardized products and therefore people can relatively easily evaluate and know the parameters of tangibility (Zeithaml, 1981; Mittal, 1999). On the other hand, complex tourism products such as land-based vacations, activities and attractions can be placed within a context that tourists find difficult to evaluate (Card, Chen, & Cole, 2003; Morrison, Jing, O'Leary, & Cai, 2001; Susskind, Bonn, & Dev, 2003). Thus, it is hypothesized that the influence of destination advertising differs significantly across the stages of the decision making process (H.1a and H.1b) and product types (H.1c).

H.1a: *Destination advertising positively influences visiting a destination as the first stage of the proposed tourist behavioral process.*

H.1b: *Destination advertising positively influences the purchasing decision as the second stage of the proposed tourist behavioral process.*

H.1c: *Destination advertising positively and differentially influences the purchasing decision for specific items (e.g., hotel, restaurant, shopping, attraction, outdoor and events) as the third stage of the proposed tourist behavioral process.*

This study attempts to examine the effects of four moderating variables that have been shown to affect the relationship between destination advertising and tourist decisions; the variables are demographics (i.e., age and income), geographical factors (i.e., distance) and information search (i.e., Internet access). Several destination advertising and tourism studies confirm the substantial impacts that these four characteristics of tourists context have on advertising and/or tourist behaviors (McWilliams & Crompton, 1997; Messmer & Johnson,

1993; Weaver & McCleary, 1984). Specifically, these studies indicate that demographics affect perceived value of destination advertising information (Soley & Reid, 1983; Shavitt, Lowrey, & Haefner, 1998). Fesenmaier and Vogt (1993) found that older and middle income individuals have higher perceived value of the information than other tourist groups. Further, Messmer and Johnson (1993) concluded that income has a positive relationship with advertising response. Based upon this research, it is hypothesized that age and income moderates the influence of advertising on the tourists' decisions:

H.2a: *Age significantly moderates the perceived impact of advertising depending upon the stage of the tourist decision process.*

H.2b: *Income significantly moderates the perceived impact of advertising depending upon the stage of the tourist decision process.*

Contrary to traditional consumer purchasing behavior in which advertising and consumption typically occur in the same geographic area, tourism is consumed outside the environment where s/he is exposed to advertising (Gratzer, Werner, & Winiwater, 2004; Mill & Morrison, 2009). In this regard, a number of studies have examined the relationship between distance and destination choice based on a definition of distance as an inherent spatial dimension of tourist destination choice (Ankomah & Crompton, 1992; Nicolau & Más, 2006). However, there is no consensus as to the effect of distance on destination choice; some authors regard it as a restriction (Fesenmaier, 1988) while others qualify this restriction since the journey itself can be a type of tourism product (Baxter, 1979; Beaman, 1974). Despite the importance of distance in tourist decision making, only a limited number of studies have taken physical distance into account when estimating tourism advertising effectiveness. For example, Woodside & Dubelaar (2002) found that distance to a destination is positively related to the usage of advertising information. A study by Messer and Johnson

(1993), however, found that geographical distance has a negative relationship in two predictive models regarding inquiry and destination visiting behaviors. Similarly in the study of advertising effectiveness by Wöber and Fesenmaier (2004), travel distance had a strong negative impact on visitation. Additionally, this study posits that behavioral involvement can explain the role of travel distance in the proposed tourist decision making process based upon the work by Fesenmaier and Johnson (1989), which define tourist planning involvement based upon information search behavior (e.g., planning time and information sources used) and distance traveled. They regard distance traveled as an approximate surrogate for the risk that may be associated with the destination choice; that is, the travel distance may represent increased risk and thus reflects higher levels of involvement as the distance increases. Thus, it is argued that geographical distance has potentially differential effects on each stage of the tourist planning process:

> **H.3:** *Travel distance significantly moderates the perceived impact of destination advertising depending upon the stage of the tourist decision process.*

It is widely accepted that the use of the Internet significantly affects the tourist decision making process in that is enables tourists to obtain a high quantity and quality of information with the minimum of time, effort, and cost (Wang, Head, & Arthur, 2002; Werthner & Klein, 1999). Accordingly, the Internet plays an important role as a media source where people can obtain tourist information, make interactions, and purchase products (Werthner & Klein, 1999; Xiang, Wöber, & Fesenmaier, 2008). Following Nelson (1974), Klein (1998) argues that products classified as experience goods can become search goods in the sense that the consumer can obtain critical product information prior to purchase decision making. Especially consumers can build indirect experience from diverse information content and stimulus such as images, videos, and travel reviews (Akehurst, 2009; Tussyadiah &

Fesenmaier, 2009). In other words, the risk inherent in tourism product choice (i.e., intangibility) can be greatly reduced as consumers gain increased knowledge about the available alternatives (Bettman & Park, 1980). Thus based upon this literature, this study argues that use of the Internet for tourist planning is likely to influence the pre-purchase search as well as the purchasing decision stages:

H.4: *Internet use for tourist planning moderates the perceived impact of advertising depending upon the stage of the tourist decision process.*

3. METHOD

3.1. Model

A Random Coefficient Logit (RCL) model was used to estimate the proposed three-stage model: first, whether to visit, second, whether to purchase advertised items at the destination, and third, the specific advertised items purchased. RCL models are an alternative to the more traditional multinomial logit models (Train, 2009) in terms of their ability to deal with the unobserved heterogeneity of consumers by assuming that the coefficients of the variables vary among consumers and their flexibility, which allows representation of different correlation patterns among alternatives. Train (2009) argues that everyone within a consumer sample is unlikely to have the same set of parameter values; that is, people have different responses to destination advertising. This variability implies the need to consider unobserved heterogeneity of individuals in parameter estimations. Hence, the utility of alternative i for consumer n is defined as $U_{in} = X_{in}\beta_n + \varepsilon_{in}$ where X_{in} is a vector that represents the attributes of the alternative and the characteristics of consumers; β_n is the vector of coefficients of these attributes and characteristics for each individual n, which represent personal tastes; and ε_{in} is a random term that is iid extreme value. This specification of the RCL model allows coefficients β_n to vary over decision makers (i.e., tourists) with density $g(\beta)$, which means

that it differs from the traditional logit model in which β is fixed (note, however, that, as indicated later, this assumes an error-component approach). Thus, the non-conditional probability is the integral of $P_n(i/\beta_n)$ over all the possible values of β_n:

$$P_i = \int_{\beta_t} \frac{\exp\left\{\sum_{h=1}^{H} x_{ih}\beta_{th}\right\}}{\sum_{j=1}^{J} \exp\left\{\sum_{h=1}^{H} x_{jh}\beta_{th}\right\}} g(\beta_n \mid \theta) d\beta_n \quad (1)$$

where J is the number of alternatives and g is the density function of β_n and θ are the parameters of this distribution (mean and variance). In this model, a significant estimation of variance implies the superiority of the Random Coefficient Logit model over the Multinomial Logit Model, due to non-compliance with Independence from Irrelevant Alternatives (IIA) and to the ability to capture heterogeneity (Train, 2009). However, the above integral does not give a closed solution, which means that its estimation requires the application of simulation techniques (Train, 2001). The final aim is to optimize the following maximum simulated log-likelihood function:

$$MSL(\theta) = \sum_{n=1}^{N}\sum_{i=1}^{J} d_{ij} \ln\left\{\frac{1}{R}\sum_{r=1}^{R} \frac{\exp\left\{\sum_{h=1}^{H} \beta_{nh}^{r} z_{ih}\right\}}{\sum_{j=1}^{J} \exp\left\{\sum_{h=1}^{H} \beta_{nh}^{r} z_{jh}\right\}}\right\} \qquad (2)$$

where R is the number of draws of the density function $\phi(\beta_n)$. In this case, vector $\theta=\{b,W\}$ represents the maximum simulated likelihood estimator (MSLE) and was estimated using Gauss 6.0.

Train (2009) demonstrates that the flexibility of the RCL model enables us to represent different correlation patterns among non-independent alternatives and, importantly, avoids the IIA assumption. Conversely, the multinomial logit model assumes the hypothesis of IIA, which supposes the existence of identical correlation patterns and, therefore,

proportional substitutions across alternatives. Indeed, the RCL model does not have the restrictive substitution patterns of the logit model, as the ratio of probabilities P_{ni}/P_{nj} depends on all the data, including the attributes of alternatives other than i and j. The flexibility of the RCL model also allows representation of any random utility model (McFadden & Train, 2000). In particular, an RCL model can approximate a nested logit (NL), which is appropriate for non-independent and nested choice alternatives. Following Browstone and Train (1999), the RCL model is analogous to an NL model in that it groups the alternatives into nests by including a dummy variable in the utility function which indicates the nest to which an alternative belongs. The presence of a common random parameter for alternatives in the same nest allows us to obtain a co-variance matrix with elements distinct from zero outside the diagonal, obtaining a similar correlation pattern to that of a LN model. Consequently, the RCL model adopts an error-component approach which allows for correlations among the utilities for different alternatives (Train, 2009).

Intuitively and for illustration purposes, let us assume that the utility function of alternative i is $U_{in}=\beta x_n+\mu_n z_i+\varepsilon_{in}$, where μ is a vector of random terms with zero mean and variance σ^2_{μ},, and ε_{in} is independently and identically distributed extreme value with variance σ^2_{ε}. The non-observed random part of the utility is $\eta_i=\mu_n z_i+\varepsilon_{in}$, which can be readily correlated with other alternatives depending on the specification of z_i. For example, assume that four hypothetical alternatives A, B, C and D have the following utility functions:

$$U_{At}=\beta x_n+\mu_n+\varepsilon_{An}$$
$$U_{Bt}=\beta x_n+\mu_n+\varepsilon_{Bn}$$
$$U_{Ct}=\beta x_n+\varepsilon_{Cn}$$
$$U_{Dt}=\beta x_n+\varepsilon_{Dn}$$

If alternatives A and B are correlated, their covariance is $\mathrm{Cov}(\eta_A, \eta_B)=E(\mu_n+\varepsilon_{An})(\mu_n+\varepsilon_{Bn})=\sigma^2_{\mu}$, whereby not only the IIA assumption is avoided, but also permits identification of correlated non-independent alternatives. Therefore, if the parameter of the variance σ^2_{μ}, is significantly

different from zero, it implies that the alternatives are correlated and must be "closer to each other" and even at the same level of decision.

3.2. Sample and Measures

Tourists' response to destination advertising was obtained using an online survey of American tourists who had requested travel-related information from eighteen different states and regional tourist offices throughout the United States during calendar year 2010. The web-based travel survey was distributed to all inquirers based upon the date of contact (within 3 months of the request for travel information) and the destination from which information was requested. This is because it is generally argued that the advantages of online surveys (e.g., low cost, fast response, and wide accessibility of the Internet) enable tourism advertising researchers to send questions to the population of people who requested travel information, and therefore largely eliminate the use of complex structured sampling procedures (Fricker & Schonlau, 2002; Hwang & Fesenmaier, 2004). This approach enables us to obtain a sizeable sample which assures robustness of the parameter estimates (i.e., underlying behavioral response), which in turn, enables us to evaluate the relative impact of the hypothesized variables on advertising response.

The online survey was delivered to 119,957 American tourists with a structured questionnaire and directed to respondents (18 years and older) obtained in the origin state (i.e. it is an origin-collected sample); this aspect of the methodology is important in that it avoids selection bias based on destination-collected sample, which leads to a more precise analysis of tourist demand as it includes not only those people who travel and purchase, but also those who do not.

In order to increase response rate, we followed a three-step process: first, an initial invitation was sent out along with the URL of the survey; second, four days later, a reminder was delivered to those who had not completed the survey; and third, the final request for

participation was sent out to those who had not completed the survey one week later. An 'Amazon.com' gift card valued at $100 was provided to one winner for each destination as an incentive to participate in the study. These efforts resulted in 13,074 responses; however, after controlling for missing values the final data includes 11,288 complete responses, which represents a 9.41 percent response rate.

In order to make the choice models operative (see Appendix), the dependent variable reflected a series of alternative responses to advertising that are available to the tourist; specifically, categorical variables were used to represent the decisions regarding whether or not to visit/not visit the destination, whether or not to purchase/not purchase an advertised item, and whether or not to purchase/not purchase a specific advertised service at the destination. In the "Hotel model", for example, the dependent variable was coded as follows: "Not visited destination" = 4; "Visited, but not purchased an advertised item" = 3; "Visited and purchased any advertised items" = 2; and, "Visited and purchased an advertised hotel" = 1. It is important to note that the decision "Not visited destination" was considered the base alternative, which enables us to estimate the relative effect of each independent variable on the decisions "Visited, but not purchased an advertised item," "Visited and purchased any advertised items," and "Visited and purchased an advertised hotel".

The independent variable measuring the perceived influence of advertising was obtained by asking the individuals how much the travel information influenced their travel plans using a semantic differential scale (e.g., 5 = 'A lot of influence' to 1 = 'No influence'). The four independent variables describing the household, Internet use as well as travel distance were measured as follows. Annual household income was measured using a single item in the following six categories: *Income 1*, up to $50,000; *Income 2*, between $50,001 and $75,000; *Income 3*, between $75,001 and $100,000; *Income 4*, between $100,001 and $125,000; *Income* 5, between $125,001 and $150,000; and *Income 6*, more than $150,000. Age of the

respondent was obtained as a single item using six categories: *Age 1*, 18 to 24 years; *Age 2*, 25 to 34 years; *Age 3*, 35 to 44 years; *Age 4*, 45 to 54 years; *Age 5*, 55 to 64 years; *Age 6*, 65 years or more. It is important to note that we used the central point in each category for both annual household income and age, arguing that by applying a monotonically increasing function transformation to the ordinal variables which holds the relative ranking and properties of the original variable enables us to obtain a parsimonious model in terms of number of parameters and enables us to calibrate parameters that can be easily interpreted within the respective variables. Internet use was measured as a dichotomous variable, whereby a value of 1 indicates that the individual visited websites to research or request additional travel information about the destination, 0 otherwise. This measure was included to assess the relative impact of additional information gained through the internet on tourist decisions. Finally, following Wöber and Fesenmaier (2004) the distance from the place of residence to the destination was measured by using three dummy (0/1) variables to indicate whether the destination is in the same state (i.e., in-state), in an adjacent state or an outer state as the individual's home; the in-state category was used as the base reference.

4. RESULTS

As can be seen in Table 1, many of the survey respondents who requested destination information were over 45 years old (45 – 54 years = 30.2%, 55 – 64 years = 31.3%, and 65 or older = 16%), approximately 80 percent of the respondents indicate that their annual household income is below $100,000, and the top fifteen resident states are listed.

Table 1 about here

The results of the modeling effort were first examined in terms of heterogeneity by

comparing the Random Coefficient Logit model to the traditional Logit model; the log-likelihood function as well as the Schwartz and Akaike Information criteria were used to assess model goodness-of-fit. As can be seen in Table 2, the models that used random parameters to assess the impact of advertising have a better fit for all the advertised items (hotel, restaurant, stores/shops, attractions, outdoor and events); these differences are significant in all cases at $\alpha = 0.01$ according to the likelihood ratio test (see Table 2). Thus, this analysis clearly indicates the existence of heterogeneity in the effect of the independent variables as related to advertising response.

Table 2 about here

A series of analyses were then conducted to assess the impact of the independent variables for each tourist decision; the results are summarized below and in Table 3.

Decision to visit. The results of the analyses indicate that advertising exerts a significant positive influence on the decision to visit a destination and is consistent with the findings of Woodside (1990) and Butterfield et al. (1998). Thus, hypothesis H.1a is accepted. The results also indicate that the variables "income", "age" and "access" have positive and significant parameters, indicating that the higher the income, the older the people and if they get information from the Internet, the greater the influence of advertising; these findings are in line with Fesenmaier and Vogt (1993). The variables "adjacent" and "outer" states show negative and significant parameters indicating that as destination distance increases, the impact of advertising on the decision to visit diminishes and is consistent with the findings reported by Messmer and Johnson (1993).

Table 3 about here

Decision to purchase services at the destination. The variable "advertising influence" is generally positive and significant - with the exception of the "Attractions model"; thus, it is concluded that destination advertising positively affects the decision to purchase services at the destination, thereby supporting Hypothesis H.1b which is in line with Gillespie and Morrison (2001). Although the parameter of "advertising influence" in the "Attractions model" is not significantly different from zero, it does have a significant standard deviation (just like the other five models). In this regard, note that in a Random Coefficient Logit Model, one estimates the parameters of a distribution of values for β. If the spread parameter (the SD) is significantly different from zero, then the distribution of values for β is significant, even though the mean of β is quite close to zero and its estimate not different from zero. In this case, the results can be interpreted that tastes and preferences are distributed in large proportions to both sides of zero. Therefore, when we find a significantly positive parameter for β, we can conclude that for most people in the sample the "advertising influence" is positive. However, it appears that for the "Attractions model" the percentage of people with a positive influence is minimal.

The results presented in Table 3 also indicate that that the impact of advertising is consistently positively correlated with "income", "age" and "access". Paralleling the decision to visit, these results suggest that higher income, older people and if they have access to information from the Internet, lead to a higher impact from advertising on the decision to purchase services; these finding are consistent with King, Reid, Tinkham, and Pokrywczynski (1987) and Werthner and Klein (1999). Note, however, in this model that the variables "adjacent" and "outer" states are not significant, which suggests that while the decision to visit a destination decreases with distance, advertising generally has the same positive effect regardless of how far the tourists must travel to the destination.

Decision to purchase specific services at the destination. While in the previous decisions - to visit and purchase - we find (as hypothesized) similar results in all the models estimated, when it comes to the analysis of specific services, we expect to find different responses to advertising on account of the distinct characteristics of each type of service. In particular, the results of this stage of the analysis consider the degree of similarity (above or below average) among the specific services, with respect to the general impact of the independent variables on the previous decision (second decision). These analyses indicate that:

i) Hotels do not present a significant advertising influence. Of course, this does not mean that advertising does not have an influence - remember that the effect of advertising is significantly positive in the decision to purchase (second stage)-; rather, it suggests that the effect of advertising on hotels is not different from the average effect. Note, however, that the coefficients are significant and positive "income" and "access" are as well as for "adjacent" and "outer" states, indicating that advertising does have an above-average positive effect when booking a hotel in adjacent or outer states (remember that their effects on the second stage (general purchase decision) are null).

ii) Restaurants do not show a significantly different advertising influence from the average positive effect on purchases either. Positive parameters are found for "income", "age" and "access" in line with the general pattern in the second stage. As for the distance variables, the interaction term "outer state × advertising influence" is significant and positive, suggesting that advertising has a greater effect on those persons living farther from the destination.

iii) The tourist decision regarding stores and shops is positively influenced by destination advertising and the interactions with "access" and "outer state" are significantly positive. It is important to note the significant and negative parameter found for the

interaction with income suggests that shopping-related decisions are less affected by destination advertising for high-income tourists.

iv) The decisions regarding attractions are positively influenced by advertising, with significant and positive interactions with “access” and “outer state”. “Age”, however, shows a significant and negative parameter, suggesting that older tourists are significantly less influenced by destination advertising.

v) Tourist decisions related to outdoor activities are positively influenced by advertising; the results indicate that “access” is positively related to advertising response, while “age” and “adjacent state” showing significant reductions in the positive effect of advertising.

vi) Event-related decisions are significantly influenced by advertising as shown by the positive parameter estimate for “access” and the negative parameter estimates for “adjacent” and “outer” states.

The results obtained in this third stage confirm that advertising has different effects depending on the type of services and supports hypothesis H.1c that advertising informativeness positively and differently moderates the purchasing decision for specific items. Additionally, the results indicate that age, income, distance and Internet search moderate the influence of advertising on tourist decisions, supporting hypotheses H.2a, H2b, H3 and H4.

Finally, Table 4 summarizes these results from a management point of view where the models represent choice probabilities which are influenced by observed variables, and are calculated using the derivatives of each choice probability. For example, focusing on the decision “to visit a destination”, Table 4 shows that an increase in one unit of the perceived advertising influence leads to an increment in the probability of going to the advertised destination of about 0.33. Table 4 also shows that perceived advertising influence is

positively affected by income (0.039), age (0.018) and internet access (0.22), and negatively impacted by distance ("adjacent destination" by -0.54 and "outer destination" by -0.89). The effect of unit changes on the "purchase" and "specific item purchase" decisions can be interpreted in the same way.

5. CONCLUSIONS

This study considers for the first time the influence of advertising within a staged decision framework where the tourist first chooses whether or not to visit a destination, and second, decides to purchase products featured in an advertisement. As a "refinement" of the second decision, the purchase of specific types of advertised products is also considered (a third stage). Consequently, this article contributes to the tourism literature in a number of important ways. First, the implementation of a staged model allows for the identification of differential advertising influences depending on both the decisions on destinations and products (1st and 2nd decisions) and the product type (3rd decision). As part of analysis, the results of this study indicate that the influence of advertising differs significantly depending upon stage of the decision making process and upon the tourism products under consderation. Second, it is argued that the proposed model better reflects what happens in people's mind when making decisions (first, where to go and then, what to buy) in that it attempts to better mimic the decision processes within an advertising context; as such, it enables the estimation of the differential impact of advertising. Thus, this model enables the destination marketing organization to consider important correlations that may exist between different decisions, and avoid the potential bias that could come from using different samples or from using a single sample with separate estimations (one for each decision).

In a more specific way, the results of this study show that tourism advertising has a positive influence on the first two decisions but with different intensities (the influence on the

destination decision is higher than in the product decision), indicating that advertising has a differential effect on each product type depending on their characteristics. Also, the significant interaction effects of income, age, distance, and Internet access indicates that tourists differ substantially in terms of the impact of advertising on the various tourist decisions. For example, income has a positive interaction effects in hotel and restaurant purchases, but it shows negative relationships when making shopping decisions. Age has a positive effect on advertising information in restaurant purchases, while having a negative impact in attraction and outdoor decisions. Finally, travel distance positively affects advertising information in hotel, restaurant, shopping, and attraction decisions, but has a negative impact on tourist decisions related to attending outdoor and events. These findings clearly indicate that the model used to evaluate advertising response must be flexible enough to reflect the heterogeneity in tourists and in the nature of trip planning process.

The results of this study provide the foundation for significant work in the area of advertising evaluation. First, studies should consider developing different individual parameters for the distinct decisions considered: one individual advertising influence parameter for the decision to visit a destination and another for the decision to purchase a specific service. Further, future research should estimate parameters for each tourist in such a way that market segments could be formed from these individual measures; this process would enable analysts to develop segments with different "predispositions to be influenced" by advertising. Finally, as the proposed model includes limited measures of advertising response and a limited number of tourist characteristics as interacting factors, future research should include alternative variables reflecting persuasive and emotional views of advertising as well as situational factors (e.g., destination knowledge/familiarity, involvement and travel party) that have been shown to affect the decision making process.

These findings are also important for destination marketing organizations as they seek to more efficiently compete for tourists. Importantly, the flexibility of the modeling approach used enables marketing managers to identify differentiated patterns of variables. For example in our empirical application we found that for the decision to visit, the more distant the destination, the lower the advertising effect, but for the decision to purchase services at the destination, advertising generally has the same positive effect regardless of how far or near the destination is. Also, the results enable us to determine not only how many of those who received information actually visited the destination, or purchased a specific product, but also enables us to identify the differential influence of advertising on each decision. What is more, this identification can be used to estimate market share which within the content of this study is understood as the proportion of people receiving the advertisements that visit a destination and opt for products for which they received information. Thus, DMOs can better manage their advertising budgets both when determining where and whom to send their own advertisement, and when negotiating their inclusion in the advertising campaign.

It is important to note several limitations to the proposed approach and therefore caution the reader regarding generalization of findings. First, although the empirical application is based on a sizeable sample, the online character of the survey does not permit the control of outside influences. Also, the degree to which advertising influenced tourist decisions was measured using respondents' perceptions rather than more objective measures that would be appropriate using some sort of experimental design. Indeed, the literature has shown that people might not provide entirely accurate self-reports of the effect of information (including advertisements) on their behavior, and therefore the estimates of advertising must be viewed in relative, rather absolute terms. With these limitations, however, it is argued that the general framework and specific findings of this study are important in that they confirm that destination marketing organizations can significantly influence the nature of one's visit

to the destination through their advertising program; also, the results of this clearly demonstrate that substantial heterogeneity exists in tourist's responses to advertising, depending upon trip facet, the nature of trip, and the demographics of the individual.

6. REFERENCES

Akehurst, G. (2009). User generated content: The use of blogs for tourism organizations and tourism consumers. *Service Business*, *3*(1), 51-61.

Alwitt, L. F., & Prabhaker, P. R. (1992). Functional and belief dimensions of attitudes to television advertising: Implications for copy testing. *Journal of Advertising Research, 32*(5), 30-42.

Ankomah, P. K., & Crompton, J. L. (1992). Tourism cognitive distance: A set of research propositions. *Annals of Tourism Research, 19*, 323-342.

Baxter, M. J. (1979). The interpretation of the distance and attractiveness components in models of recreational trips. *Geographical Analysis, 11*(3), 311–315.

Beaman, J. (1974). Distance and the 'Reaction' to distance as a function of distance. *Journal of Leisure Research*, *6,* 220–231.

Beldona, S., Morrison, A, M., & O'Leary, J. (2005). Online shopping motivations and pleasure travel products: A correspondence analysis. *Tourism Management*, *26,* 561-570.

Bettman, R. J., & Park, C. W. (1980). Effects of prior knowledge and experience and phase of the choice process on consumer decision processes. *Journal of Consumer Research*, *7*, 234-248.

Browstone, D., & Train, K. (1999). Forecasting new product penetration with flexible substitution patterns. *Journal of Econometrics*, *89,* 109-129.

Burke, J. F., & Gitelson, R. (1990). Conversion studies: Assumptions, applications, accuracy and abuse. *Journal of Travel Research, 28*(3), 46-51.

Butterfield, D. W., Deal, K. R., & Kubursi, A. A. (1998). Measuring the returns to tourism advertising. *Journal of Travel Research, 37,* 12-20.

Card, J., Chen, C., & Cole, S. (2003). Online travel products shopping: Differences between shoppers and nonshoppers. *Journal of Travel Research, 42*(2), 133-139.

Dellaert, B., Borgers, A., & Timmermans, H. (1996). Consumer activity pattern choice: Development and test of stage-dependent conjoint choice experiments. *Journal of Retailing and Consumer Services, 4*(1), 25-37.

Eymann, A., & Ronning, G. (1992). *Discrete Choice Analysis of Foreign Travel Demand.* In: H.J. Vosgerau, Editor, European.

Fesenmaier, D. R. (1988). Integrating activity patterns into destination choice models. *Journal of Leisure Research, 20,*175-191.

Fesenmaier D. R., & Johnson, B. (1989). Involvement-based segmentation: Implications for travel marketing Texas. *Tourism Management, 10*(4), 293-300.

Fesenmaier, D. R., & Jeng, J. (2000). Assessing structure in the pleasure trip planning process. *Tourism Analysis, 5,* 13–27.

Fesenmaier, D. R., & Vogt, C. A. (1993). Evaluating the economic impact of travel information provided at Indiana welcome centers. *Journal of Travel Research*, *31*(3), 33-39.

Fricker, R. D., & Schonlau, M. (2002). Advantages and disadvantages of Internet research surveys: Evidence from the literature. *Field Methods,* 14(4), 347-367.

Gainesville.com (2008). Tourism States Reconsider Advertising Budget in Tough Economic Times. Retrieved May 15, 2010, from eTurboNews Web site: http://www.eturbonews.com/6832/tourism-states-reconsider-advertising-budget-tough-economic-times.

Gillespie, C., & Morrison, A. (2001). Commercial hospitality consumption as a live marketing communication system. *International Journal of Contemporary Hospitality Management, 13*(4), 183 – 188.

Gratzer, M., Werner, H., & Winiwater, W. (2004). Electronic business in tourism. *International Journal of Electronic Business*, *2*(5), 450-459.
Gretzel, U., Yuan, Y-L., & Fesenmaier, D. R. (2000). Preparing for the new economy: Advertising strategies and change in destination marketing organizations. *Journal of Travel Research, 39*(2), 146-156.
Gretzel, U., Hwang, Y., & Fesenmaier, D. R. (2006). *A Behavioral Framework for Travel Destination Recommendation Systems Design*. In D. Fesenmaier, H. Werthner and K. Wöber (Eds.), Destination Recommendation Systems: Behavioral Foundations and Applications, pp. 53-64. Cambridge, MA: CAB International.
Hunt, J. D., & Dalton, M. J. (1983). Comparing mail and telephone for conducting coupon conversion studies. *Journal of Travel Research, 21,* 16-18.
Hwang, Y. H., & Fesenmaier, D. R. (2004). Coverage error embedded in self-selected Internet-based samples: A case study of Northern Indiana. *Journal of Travel Research, 42*(3), 297-304.
Jeng, J., & Fesenmaier, D. R. (2002). Conceptualizing the travel decision-making hierarchy: A review of recent developments. *Tourism Analysis, 7*(1), 15–32.
Kim, D -Y., Hwang, Y-H., & Fesenmaier, D. R. (2005). Modeling tourism advertising effectiveness. *Journal of Travel Research, 44,* 42-49.
King, K. W., Reid, L. N., Tinkham, S. F., & Pokrywczynski, J. (1987). The perceived informativeness of national and retail advertising. *Current Issues and Research in Advertising*, *10*(1), 173-198.
Klein, L. R. (1998). Evaluating the potential of interactive media through a new lens: Search versus experience goods. *Journal of Business Research, 41,* 195-203.
Kulendran, N., & Dwyer, L. (2009). Measuring the return from Australian tourism marketing expenditure. *Journal of Travel Research, 47*(3), 275-284.
McFadden, D., & Train, K. (2000). Mixed MNL models of discrete response. *Journal of Applied Econometrics*, *15,* 447-470.
McWilliams, E. G., & Crompton, J. L. (1997). An expanded framework for measuring the effectiveness of destination advertising. *Tourism Management, 18*(3), 127-137.
Messmer, D. J., & Johnson, R. R. (1993). Inquiry conversion and travel advertising effectiveness. *Journal of Travel Research, 31*(4), 14-21.
Mill, R. Ch., & Morrison, A. M. (2009). *The Tourism System.* Englewood Cliffs, NJ: Prentice Hall.
Mittal, B. (1999). The advertising of services: Meeting the challenge of intangibility. *Journal of Service Research*, *2,* 98-116.
Mok, H. M. (1990). A quasi-experimental measure of effectiveness of destinational advertising: Some evidence from Hawaii. *Journal of Travel Research, 29*(1), 30-34.
Morrison, A. M., Jing, A., O'Leary, J. T., & Cai, L. (2001). Predicting usage of the Internet for travel bookings: An exploratory study. *Information Technology and Tourism, 4*(1), 15-30.
Nicolau, J. L., & Más, F. J. (2006). The influence of distance and prices on the choice of tourist destinations: The moderating role of motivations. *Tourism Management, 27*(5), 982-996.
Nysveen, H. (2003). The importance of risk-reducing value-added services in online environments: An exploratory study on various segments of leisure tourism. *Information Technology and Tourism, 6,* 113-127.
Papatheodorou, A., Rossello, J., & Xio, H. (2010). Global economic crisis and tourism: consequences and perspectives. *Journal of Travel Research, 49,* 39-45.
Petrick, J., Li, X., & Park, S. (2007). Cruise passengers' decision-making processes. *Journal of Travel & Tourism Marketing, 23*(1), 1-14.

Ritchie, J. R. B., Molinar, C. M. A., & Frechtling, D. C. (2010). Impacts of the world recession and economic crisis on tourism: North America. *Journal of Travel Research, 49*(1), 5-15.
Shavitt, S., Lowrey, P., & Haefner, J. (1998). Public attitudes toward advertising: More favorable than you might think. *Journal of Advertising Research, 38*(4), 7-22.
Shields, P. O. (2006). State-funded tourism marketing: The effectiveness of state travel guides for the college market. *Journal of Travel & Tourism Marketing, 20*(2), 31-49.
Siegel, W., & Ziff-Levine, W. (1990). Evaluating tourism advertising campaigns: Conversion vs. advertising tracking studies. *Journal of Travel Research, 28*(3), 51-55.
Silberman, J., & Klock, M. (1986). An alternative to conversion studies for measuring the impact of travel ads. *Journal of Travel Research*, *28,* 12-16.
Soley, L. C., & Reid, L. N. (1983). Satisfaction with the informational value of magazine and television advertising. *Journal of Advertising, 12*(3), 27-31.
Spring. J. (2010). Tourism May Bow to Budget Woes Next Year. Retrieved January 10, 2011, from The Sun News Web site: http://www.thesunnews.com/2010/12/05/1848567/tourism-may-bow-to-budgetwoes.html.
Susskind, A. M., Bonn, M. A., & Dev, C. S. (2003). To look or book: An examination of consumers' apprehensiveness toward Internet use. *Journal of Travel Research, 41*(3), 256-264.
Train, K. E. (2001) Halton sequences for mixed logit, Working paper, University of California, Berkeley.
Train, K. E. (2009). *Discrete Choice Methods with Simulation*, Nueva York: Cambridge University Press.
Tussyadiah, I. P., & Fesenmaier, D. R. (2009). Mediating tourists experiences-access to places via shared videos. *Annals of Tourism Research*, *36*(1), 24-40.
USTA (2009). *2008-2009 Survey of U.S. State & Territory Tourism Office Budgets.* Washington, DC: U. S. Travel Association.
USTA (2011). The Power of Travel Promotion. Washington, DC: U. S. Travel Association.
Wang, F., Head, M., & Arthur, N. (2002). E-tailing: An analysis of web impacts on the retail market. *Journal of Business Strategies,* 19(1), 73-93.
Weaver, P. A., & McCleary, K. W. (1984). A market segmentation study to determine the appropriate ad/model format for travel advertising. *Journal of Travel Research, 23*(1), 12-16.
Werthner, H., & Klein, S. (1999). *Information Technology and Tourism - A Challenging Relationship*. Springer.
Wöber, K., & Fesenmaier, D. R. (2004). A multi-criteria approach to destination benchmarking: A case study of state tourism advertising programs in the United States. *Journal of Travel and Tourism Marketing*, *16*(2/3), 1-18.
Woodside, A. G. (1990). Measuring advertising effectiveness in destination marketing strategies. *Journal of Travel Research, 29*(2), 3-8.
Woodside, A. G., & Dubelaar, C. (2002). A general theory of tourism consumption systems: A conceptual framework and an empirical exploration. *Journal of Travel Research, 41*(2), 120-132.
Woodside, A. G., & King, R. I. (2001). An updated model of travel and tourism purchase-consumption systems. *Journal of Travel and Tourism Marketing, 10*(1), 3-27.
Woodside, A. G., & Lysonski, S. (1989). A general model of traveler destination choice. *Journal of Travel Research, 27*(4), 8-14.
Woodside, A., & MacDonald, R. (1994). General system framework of customer

choice processes of tourism services. In R. Gasser, & K. Weiermair (Eds*.), Spoilt for choice: Decision-making processes and preference changes of tourists – Intertemporal and intercountry perspectives.* Thaur, Austria: Kulturverlag.

Woodside, A. G., McDonald, R. M., & Trappey, R. J. (1997). Measuring linkage-advertising effects on customer behavior and net revenue. *Canadian Journal of Administrative Sciences, 14*(2), 214-228.

Xiang, Z., Wöber, K., & Fesenmaier, D. R. (2008). Representation of the online tourism domain in search engines. *Journal of Travel Research, 47*(2), 137-150.

Zeithaml V. A. (1981). *How Consumer Evaluation Processes Differ between Goods and Services*, reprinted in Lovelock, C. (1991), *Services Marketing*, 2nd Edition, Upper Saddle River, New Jersey: Prentice Hall.

Appendix. Key questions and response options included in the survey

1. Overall, how much did the travel information you saw, read or heard influence your travel plans to the destination? (from no influence 1 to a lot of influence 5)

1 2 3 4 5

2. Did any of the following events occur during the trip? *Please ✓a response for each*

	Yes	No	Don't know
Visit an advertised attraction?			
Visit an advertised restaurant?			
Attend an advertised event?			
Visit an advertised store or shop?			
Stay in an advertised hotel?			
Participate in advertised outdoor activities?			

3. Have you (or member of your household) used the Internet within the past 2 years to plan at least some aspects of your leisure travel?

☐ Yes ☐ No

4. What is your age? *Please ✓one.*

☐ 18-24 years ☐ 25-34 years ☐ 35-44 years ☐ 45-54 years ☐ 55-64 years ☐ 65 years or more

5. Which category best represents the total annual income of your household? *Please ✓one.*

☐ Less than $50,000 ☐ $50,001-$75,000 ☐ $75,001-$100,000 ☐ $100,001-$125,000 ☐ $125,001-$150,000 ☐ Greater than $150,000

Table 1.

Descriptive Characteristics of Respondents

Demographic Characteristic	Frequency	Percent of Respondents
Age (N = 11,288)		
18 – 24 years	95	0.8
25 – 34 years	734	6.5
35 – 44 years	1,707	15.1
45 – 54 years	3,411	30.2
55 – 64 years	3,535	31.3
65 or older	1,806	16.0
Annual household income (N = 11,288)		
Less than $50,000	3,158	28.0
$50,001 – $75,000	3,335	29.5
$75,001 – $100,000	2,705	24.0
$100,001 – $125,000	1,412	12.5
$125,001 or more	678	6.0
Top 15 Resident states (N = 11,288)		
Texas	1,294	11.5
Illinois	967	8.6
Missouri	733	6.5
California	680	6.0
Ohio	657	5.8
Arizona	382	3.4
Florida	364	3.2
Colorado	355	3.1
Indiana	354	3.1
New York	352	3.1
Kansas	339	3.0
Pennsylvania	333	3.0
Michigan	328	2.9
Wisconsin	275	2.4
Kentucky	242	2.1

Table 2.

Goodness-Of-Fit Statistics for Six Travel Decisions

	Hotel			Restaurant			Shopping		
	Log-likelihood	**SIC**	**AIC**	**Log-likelihood**	**SIC**	**AIC**	**Log-likelihood**	**SIC**	**AIC**
Traditional Logit	-11487.01	-11529.56	-11508.01	-11526.65	-11569.20	-11547.65	-11638.02	-11680.57	-11659.02
RCL Logit	-11427.24	-11475.87	-11451.24	-11466.27	-11514.90	-11490.27	-11579.21	-11627.84	-11603.21
Likelihood ratio test	119.54 ($p<0.001$)			120.76 ($p<0.001$)			117.62 ($p<0.001$)		
	Attractions			**Outdoor**			**Events**		
	Log-likelihood	**SIC**	**AIC**	**Log-likelihood**	**SIC**	**AIC**	**Log-likelihood**	**SIC**	**AIC**
Traditional Logit	-11296.88	-11339.43	-11317.88	-11411.57	-11454.12	-11432.57	-11339.16	-11381.71	-11278.80
RCL Logit	-11239.11	-11287.74	-11263.11	-11354.4	-11403.03	-11378.4	-11278.8	-11327.43	-11302.80
Likelihood ratio test	115.54 ($p<0.001$)			114.34 ($p<0.001$)			120.72 ($p<0.001$)		

Table 3.

Results of RCL Analysis based upon the Three-Stage Model of Six Travel Decisions

Variables		Hotel				Restaurant				Shopping			
		Parameter	SD	t-statistic	p-value	Parameter	SD	t-statistic	p-value	Parameter	SD	t-statistic	p-value
influence (visit decision)		1.238	0.255	4.861	0.000	1.220	0.236	5.176	0.000	1.218	0.247	4.929	0.000
SD [influence (visit decision)]		1.518	0.359	4.232	0.000	1.494	0.313	4.774	0.000	1.493	0.338	4.410	0.000
influence (purchase decision)		0.215	0.069	3.092	0.002	0.265	0.073	3.643	0.000	0.135	0.072	1.859	0.063
SD [influence (purchase decision)]		-0.142	0.082	-1.718	0.086	-0.153	0.086	-1.783	0.075	-0.166	0.089	-1.872	0.061
influence (specific item purchase decision)		0.014	0.060	0.235	0.814	-0.102	0.070	-1.462	0.144	0.192	0.055	3.475	0.001
SD [influence (specific item purchase decision)]		0.063	0.051	1.228	0.219	-0.204	0.109	-1.866	0.062	-0.069	0.133	-0.520	0.603
Visit decision	Income × influence	0.146	0.041	3.584	0.000	0.144	0.036	3.990	0.000	0.144	0.039	3.731	0.000
	Age × influence	0.067	0.028	2.371	0.018	0.065	0.027	2.420	0.016	0.065	0.027	2.387	0.017
	Internet access × influence	0.827	0.236	3.509	0.000	0.807	0.214	3.780	0.000	0.812	0.226	3.591	0.000
	Adjacent destination × influence	-2.032	0.407	-4.999	0.000	-2.017	0.365	-5.525	0.000	-2.010	0.388	-5.185	0.000
	Outer destination × influence	-3.341	0.661	-5.052	0.000	-3.310	0.584	-5.667	0.000	-3.301	0.626	-5.273	0.000
Purchase decision	Income × influence	0.020	0.011	1.878	0.060	0.015	0.011	1.368	0.171	0.039	0.011	3.506	0.000
	Age × influence	0.024	0.010	2.311	0.021	0.012	0.011	1.070	0.285	0.022	0.011	2.023	0.043
	Internet access × influence	0.291	0.030	9.594	0.000	0.271	0.033	8.126	0.000	0.296	0.034	8.725	0.000
	Adjacent destination × influence	-0.043	0.028	-1.555	0.120	-0.012	0.030	-0.388	0.698	-0.013	0.029	-0.432	0.666
	Outer destination × influence	0.009	0.033	0.273	0.785	0.011	0.035	0.311	0.756	0.017	0.035	0.480	0.631
Specific item purchase	Income × influence	0.031	0.007	4.396	0.000	0.030	0.009	3.424	0.001	-0.013	0.007	-1.868	0.062
	Age × influence	-0.008	0.008	-1.005	0.315	0.018	0.009	2.010	0.044	0.000	0.008	-0.053	0.957
	Internet access × influence	0.139	0.021	6.621	0.000	0.149	0.037	3.974	0.000	0.099	0.023	4.337	0.000
	Adjacent destination × influence	0.115	0.020	5.667	0.000	0.008	0.024	0.361	0.718	0.015	0.020	0.755	0.450
	Outer destination × influence	0.109	0.022	5.004	0.000	0.052	0.026	2.025	0.043	0.052	0.022	2.426	0.015
const (visit decision)		-1.332	0.174	-7.658	0.000	-1.298	0.172	-7.545	0.000	-1.317	0.176	-7.494	0.000
const (purchase decision)		-0.537	0.137	-3.933	0.000	-0.948	0.144	-6.586	0.000	-0.683	0.143	-4.778	0.000
const (specific item purchase decision)		-1.234	0.129	-9.589	0.000	-0.116	0.127	-0.917	0.359	-0.731	0.125	-5.867	0.000

Note: SD = Standard Deviation.

Table 3 (cont.)

Variables		Attraction				Outdoor				Events			
		Parameter	**SD**	**t-statistic**	**p-value**	**Parameter**	**SD**	**t-statistic**	**p-value**	**Parameter**	**SD**	**t-statistic**	**p-value**
influence (visit decision)		1.216	0.244	4.975	0.000	1.215	0.248	4.893	0.000	1.244	0.257	4.838	0.000
SD [influence (visit decision)]		1.488	0.336	4.422	0.000	1.489	0.343	4.341	0.000	1.536	0.352	4.364	0.000
influence (purchase decision)		0.103	0.077	1.343	0.179	0.123	0.072	1.714	0.086	0.162	0.070	2.295	0.022
SD [influence (purchase decision)]		-0.161	0.088	-1.822	0.068	-0.156	0.089	-1.739	0.082	-0.168	0.086	-1.948	0.051
influence (specific item purchase decision)		0.188	0.059	3.195	0.001	0.292	0.061	4.811	0.000	0.174	0.074	2.348	0.019
SD [influence (specific item purchase decision)]		-0.029	0.041	-0.691	0.490	-0.075	0.236	-0.315	0.753	-0.196	0.073	-2.689	0.007
Visit decision	Income × influence	0.144	0.039	3.722	0.000	0.144	0.039	3.671	0.000	0.148	0.040	3.690	0.000
	Age × influence	0.066	0.027	2.407	0.016	0.066	0.028	2.378	0.017	0.068	0.029	2.392	0.017
	Internet access × influence	0.808	0.224	3.611	0.000	0.811	0.228	3.550	0.000	0.841	0.235	3.579	0.000
	Adjacent destination × influence	-2.003	0.385	-5.204	0.000	-2.004	0.392	-5.116	0.000	-2.063	0.408	-5.061	0.000
	Outer destination × influence	-3.291	0.622	-5.288	0.000	-3.292	0.634	-5.195	0.000	-3.385	0.656	-5.158	0.000
Purchase decision	Income × influence	0.027	0.012	2.304	0.021	0.031	0.011	2.879	0.004	0.031	0.011	2.933	0.003
	Age × influence	0.040	0.011	3.474	0.001	0.038	0.010	3.629	0.000	0.026	0.010	2.470	0.014
	Internet access × influence	0.235	0.035	6.794	0.000	0.299	0.032	9.208	0.000	0.313	0.033	9.469	0.000
	Adjacent destination × influence	0.004	0.030	0.131	0.896	0.013	0.028	0.479	0.632	0.020	0.028	0.693	0.488
	Outer destination × influence	-0.019	0.037	-0.524	0.601	0.034	0.034	1.011	0.312	0.081	0.033	2.429	0.015
Specific item purchase	Income × influence	0.008	0.008	1.023	0.306	0.004	0.007	0.552	0.581	0.003	0.008	0.351	0.725
	Age × influence	-0.028	0.008	-3.365	0.001	-0.050	0.009	-5.434	0.000	-0.014	0.009	-1.565	0.117
	Internet access × influence	0.166	0.020	8.150	0.000	0.136	0.030	4.584	0.000	0.123	0.025	4.854	0.000
	Adjacent destination × influence	-0.013	0.021	-0.610	0.542	-0.054	0.024	-2.229	0.026	-0.084	0.024	-3.534	0.000
	Outer destination × influence	0.095	0.024	3.903	0.000	0.032	0.022	1.441	0.150	-0.136	0.028	-4.823	0.000
const (visit decision)		-1.318	0.173	-7.616	0.000	-1.321	0.175	-7.568	0.000	-1.322	0.178	-7.427	0.000
const (purchase decision)		-1.012	0.150	-6.756	0.000	-0.563	0.141	-3.983	0.000	-0.540	0.139	-3.891	0.000
const (specific item purchase decision)		0.039	0.124	0.317	0.751	-1.217	0.130	-9.395	0.000	-1.348	0.145	-9.275	0.000

Note: SD = Standard Deviation.

Table 4.

Marginal effects on probabilities

		Hotel	Restaurant	Shopping	Attraction	Outdoor	Events
influence (visit decision)		0.334	0.329	0.329	0.328	0.328	0.336
influence (purchase decision)		0.052	0.065	0.033	n.s.	0.030	0.039
influence (specific item purchase decision)		n.s.*	n.s.	0.033	0.038	0.037	0.020
Visit decision	Income × influence	0.039	0.039	0.039	0.039	0.039	0.040
	Age × influence	0.018	0.017	0.018	0.018	0.018	0.018
	Internet access × influence	0.223	0.218	0.219	0.218	0.219	0.227
	Adjacent destination × influence	-0.548	-0.545	-0.543	-0.541	-0.541	-0.557
	Outer destination × influence	-0.901	-0.894	-0.891	-0.888	-0.889	-0.913
Purchase decision	Income × influence	0.005	n.s.	0.009	0.006	0.007	0.008
	Age × influence	0.006	n.s.	0.005	0.010	0.009	0.006
	Internet access × influence	0.071	0.066	0.072	0.057	0.073	0.076
	Adjacent destination × influence	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.
	Outer destination × influence	n.s.	n.s.	n.s.	n.s.	n.s.	0.020
Specific item purchase	Income × influence	0.004	0.006	-0.002	n.s.	n.s.	0.000
	Age × influence	n.s.	0.004	n.s.	-0.006	-0.006	n.s.
	Internet access × influence	0.019	0.028	0.017	0.034	0.017	n.s.
	Adjacent destination × influence	0.016	n.s.	n.s.	n.s.	-0.007	-0.010
	Outer destination × influence	0.015	0.010	0.009	0.019	n.s.	-0.016

*n.s.= non significant parameter. In the estimated models (Table 3), these parameters were not significant, so we do not calculate their derivatives.

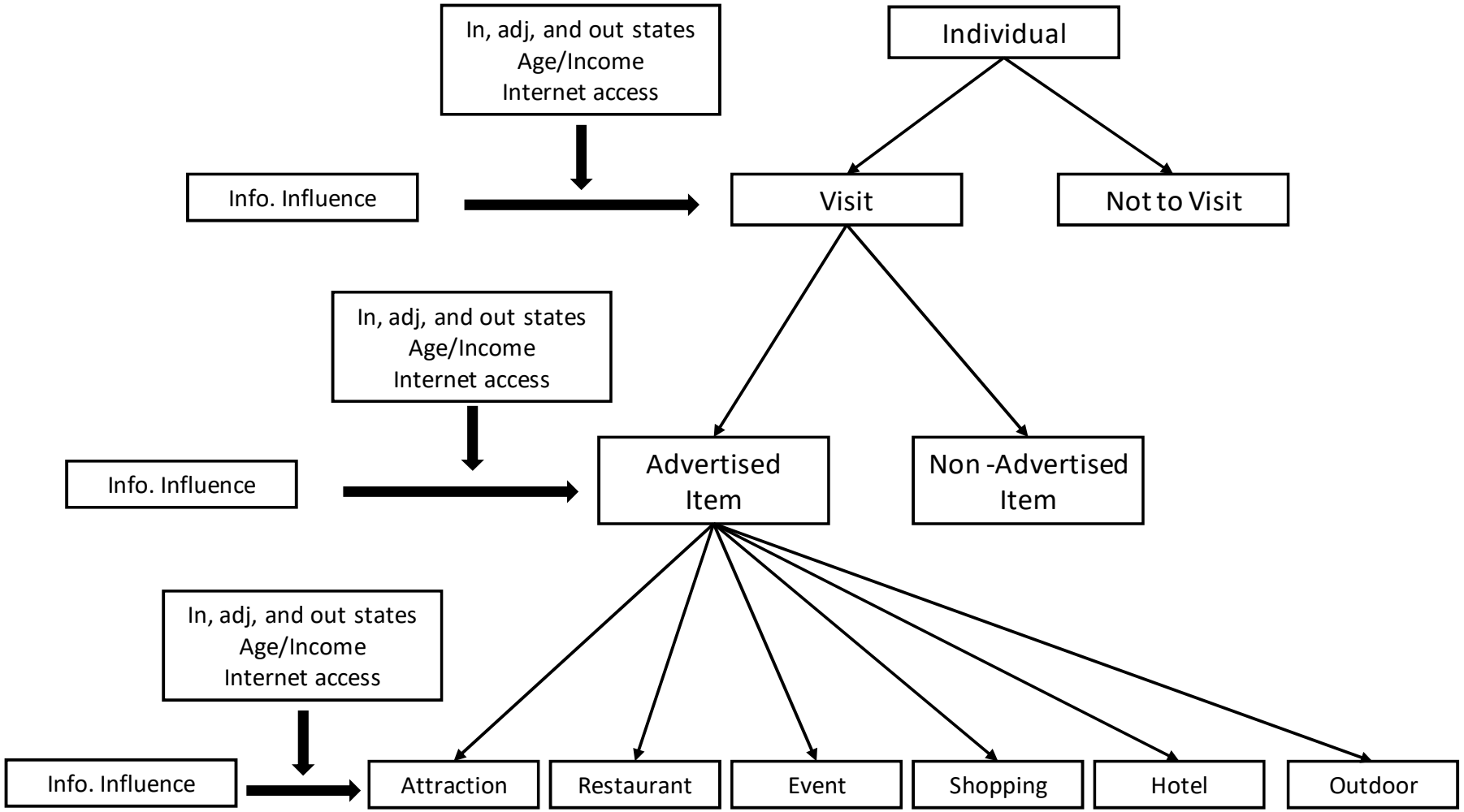

Figure 1. A Proposed Model