Modeling Side Stop Purpose During Long Distance Travel Using the 1995 American Travel Survey (ATS)

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ABSTRACT

This paper examines the most common side stop purpose made by a traveler or travel party during long-distance travel of over 100 miles or more. The research uses the 1995 American Travel Survey (ATS) because it is one of the few data sources that collects information on stops and side trips for long-distance trips. The paper utilizes a mixed multinomial logit formulation for modeling the most common side stop purpose during long-distance travel. A variety of variables, including trip and household characteristics, are considered in the model specification. The factors that play the largest role in determining side stop choice are the primary purpose of the long-distance trip and whether the trip is a planned vacation or not.

Keywords: long-distance travel, leisure travel, side stops, side trips, mixed multinomial logit

1. INTRODUCTION

Historic Route 66, the famous national highway connecting Illinois to California, is known for its eclectic and memorable stops and roadside attractions. From the 1930's to the 1950's, this highway supported all of the long-distance travel between the east and west coasts of the United States (Scott and Kelly, 1988). A large percentage of this travel was undertaken by vacationers, and this travel contributed to the development of the iconic businesses, attractions, hotels, and other amenities along Route 66 (Scott and Kelly, 1988). Interstate Highways have expanded considerably since those days of Route 66, and more travelers are using these new highways for their own personal long-distance travel.

To be sure, millions of long-distance trips are made in the US every year (van Middelkoop *et al.*, 2004). These trips, especially those pursued with a personal vehicle, are becoming more common as car ownership increases and more areas become accessible with the expansion of the highway system (van Middelkoop *et al.*, 2004). Long-distance trips are pursued for a variety of purposes including work, vacation, education, visiting friends or relatives, and shopping. Regardless of the travel purpose, many travelers choose to make stops or side trips during their long-distance travel, and, as in the case of Route 66, these choices can significantly affect the development of areas around major travel corridors. In particular, where travelers choose to stop and the type of activities they participate in during that stop can affect, over a long period, the economic vitality, land use development, traffic congestion, and travel patterns along long-distance travel corridors. In the short term, however, area characteristics are fixed and it is the area characteristics that impact travelers' decisions about where to stop and what for.

The inter-relationship between area characteristics and long-distance trip stop-making is intricate and important to understand from both a land development and travel perspective. For instance, from a land development perspective, Newman (2001) indicated that "while more Americans are taking more road trips by car, these trips are becoming less enjoyable. Traffic, other drivers, driving itself, and long periods of time in the car can take some joy out of road travel. … These problems represent economic opportunities for wayside service providers who can offer entertainment, quick and good food, and activities within walking distance of the car." From a travel perspective, an understanding of the demand for stops as a function of area characteristics can help provide adequate parking facilities and build appropriate roadway capacity.

In the current paper, we focus on the short term, travel-oriented, perspective of the factors influencing traveler stop making on long-distance trips. In particular, the research is directed toward identifying the different characteristics of personal long-distance travel, including household, travel party, and trip characteristics, that influence the most common type of stop a travel party makes during a long-distance trip. Such an analysis can help planners better understand user travel behavior, identify the most important kind of development needed on certain corridors, promote new corridors through offering appropriate types of side trips to travelers, improve long distance travel experiences, and manage demand for long distance travel.

The rest of this paper is structured as follows. The next section provides a brief overview of the relevant literature. Section 3 discusses the data source and sample characteristics. Section 4 presents the model structure and estimation methodology. Section 5 describes the empirical study results. Finally, section 6 concludes the paper by summarizing the research findings.

2. OVERVIEW OF THE LITERATURE

There are two streams of research in the transportation field that are relevant to the study of side stops on long-distance trips: long-distance travel-related studies and leisure travel-related studies. Each of these streams of research is briefly discussed in turn below.

2.1 Long-Distance Travel

Long-distance travel is usually defined to include trips whose (home-to-home) lengths exceed 100 miles. Some earlier research efforts in this stream have examined overarching characteristics of long-distance travel. One area of research within this stream examines who makes long-distance travel and by what means they travel. In general, people from all socio-demographic groups make long-distance trips each year. Similarly, people are willing to take a variety of modes for long-distance travel. However, while trains and planes may be faster, Beecroft *et al.* (2003) found that people overwhelmingly prefer to take their own personal vehicles. Another study in the field indicated that few people take long-distance trips alone (BTS, 1995).

A second area of research in the long-distance travel behavior literature is the most common purpose for the long-distance trip. Earlier research has identified two primary reasons for long-distance travel. The first is for sightseeing, as found in an analysis of the long-distance

trips recorded in the American Travel Survey (BTS, 1995). The second primary reason is to visit friends and family (Beecroft *et al.*, 2003). A weekend activity study conducted by Lockwood, Srinivasan, and Bhat (2005) reiterates these findings by stating that long-distance travel during the weekend is most commonly for leisure purposes, including sightseeing and visiting.

2.2 Leisure Travel

The second stream of research relevant to an examination of long-distance side stops is leisure travel, defined as "all journeys that do not fall clearly into the other well-established categories of commuting, business, education, escort, and sometimes other personal business and shopping" (Anable, 2002). Anable noted that leisure travel is quite important as it accounts for 40-50% of all distance traveled in most western economies.

Several research efforts in the leisure travel area have focused on examining the characteristics of travelers influencing the form and structure of leisure travel. For instance, Anable (2002) described how changes in the population can cause travelers to be more interested in side trips and stops during their leisure travel: "Increases in disposable income and demographic factors such as an aging population with decent incomes, abundant leisure time, and increasing confidence to travel are some of the more direct and obvious factors influencing the form and structure of leisure travel." Newman (2001) recognized that "retirees tend to view road trips as an adventure. They are more relaxed, willing to go at a slower pace, and spend more time exploring. … Young travelers, with or without children, resent being in the car over long periods of time and just want to get there." Schneider and Vogt (2005) noted that recreation leisure travel varies greatly by household composition, while Lanzendorf (2002) observed that since "orientations, lifestyles, and mobility styles are formed and developed over a long time period by individuals' experience in life, … it can be claimed that including orientations or styles is useful for explaining travel behavior." As in the case of long-distance trips, the mode choice for leisure trips is predominantly personal-use vehicles (BTS, 1995), and the primary reason for leisure travel is "social interactions with friends or relatives." (Schlich *et. al.*, 2002)

2.3 Summary

The earlier research in the long-distance travel and leisure travel streams has primarily focused on the characteristics of the individuals who pursue such travel and the primary purpose of the

travel. However, no earlier study that we are aware of has explicitly modeled the factors that affect the characteristics of side stops made during long-distance trips or leisure trips. This current research attempts to fill this gap in the literature by examining the nature and characteristics of side-stops and the determinants of the most common purpose of these side stops. The data used in the empirical analysis is drawn from the 1995 American Travel Survey (ATS) that obtained information on the long-distance travel of a sample of individuals traveling in the United States.

3. THE DATA

3.1 Data Source

The data source for this research is the 1995 American Travel Survey (ATS), conducted by the Bureau of Transportation Statistics (see BTS, 2006). The survey collected information from 80,000 American households on all long-distance trips of 100 miles or more over a 3-month period. The records only include complete trips, or travel that eventually returns to its origin (*i.e.* home to home trips or tours)[1]. To confine the scope of our analysis, we focus on long-distance trips pursued by a personal vehicle.

The main reason for selecting the ATS data for our analysis is that it incorporates information on stops and side trips. Specifically, the ATS dataset records the 'Number of Stops' and 'Reason for Each Stop' for each long-distance trip. Our preliminary analysis indicated that a substantial fraction of the long-distance trips did not include side stops. Since the focus of this analysis is on side stop purpose, the sample used in the current analysis is limited to the 11,745 long-distance trips that had one or more side stops.

Table 1 provides the distribution of the number of stops and the side stop purposes for those trips with at least 1 stop. The table shows that almost all travelers (99.8%) who make a stop during a long-distance trip do so more than once and all stops in the same long distance trip tend to be of the same purpose, especially for two-stop long-distance trips, which constitutes a vast fraction of the total long-distance trips with one or more stops. Thus, we confine our attention in this paper to the most common side stop purpose, defined as the most often pursued purpose across all side stops in a long-distance trip.

[1] In the usual urban area travel demand terminology, such home-to-home journeys are referred to as tours. Thus, the ATS collects information on all tours whose lengths are 100 miles or more. In this paper, we will refer to these home-to-home journeys in the more common terminology of leisure travel research as trips.

3.2 Sample Description

As discussed earlier, the sample used in the current empirical analysis comprises 11,745 long-distance trips made by at least one person from the surveyed households. In this section, we discuss the sample characteristics under three categories: trip characteristics, household characteristics, and stop purpose characteristics. The first two categories correspond to the independent variables in the analysis, while the last category is the dependent variable.

3.2.1 Trip Characteristics

Several trip characteristics are considered as potential determinants of side stop purpose, including primary purpose of the long-distance trip, travel party size and composition, and nature of the long-distance travel (day of week of departure from home, planned vacation or otherwise, number of nights at primary destination, number of nights not at primary destination, and total trip length). Summary characteristics of these variables are briefly discussed in the next paragraph.

The distribution of the primary purpose of the long-distance trips is: Work (21.5%), Pleasure (76%), and Work & Pleasure (2.5%). In terms of travel party, most trips comprise 1 or 2 adults. In 20% of the long-distance trips, there are no children present. In comparison, over 35% of long-distance trips include a non-household member. The split of long-distance trips by the day of week indicates a higher percentage on weekdays (68%) than weekends (32%). This suggests that individuals who make side stops consciously choose to leave home on weekdays so they have adequate time to invest in the side stops. Also, of the long-distance trips, 54% are pursued as part of a planned vacation, while 46% are not part of a planned vacation. The fraction of long-distance trips by number of nights at primary destination (number of nights not at primary destination) is: 0-5 nights- 88.4% (66.5%); 6-10 nights- 7.9% (18.9%); 11-20 nights- 2.3% (10.4%); 21 nights or more- 1.4% (4.2%). The trip lengths (defined as the total distance from the origin point to the final destination point and back) varied from 100 miles to over 15,000 miles, with 45.2% between 100-500 miles, 24.2% between 501-1000 miles, 17.8% between 1001-2000 miles, 11.3% between 2001-4500 miles, and 1.5% over 4500 miles. The skew of the distribution towards short distances is not surprising, given our focus on long-distance trips pursued with a personal vehicle.

3.2.2 Household Characteristics

Three household characteristics are considered in the analysis as potential determinants of side stop purpose. These are household income, household ethnicity, and household size.

The household income distribution indicates that 25% of the long-distance trips are made by low-income households (less than $30,000 annual income), 58% by middle-income households ($30,000-$75,000), and 17% by high-income households (greater than $75,000). The ethnicity distribution reveals that a majority of long-distance trips with one or more side stops (95%) are made by Caucasian-Americans. The percentage of African-American trip makers in the sample is 2.5%. The size of the household the traveler is from varies from 1 to 7, with the distribution as follows: 1 (15.5%), 2 (37.5%), 3 (17%), 4 (18%), 5 (8%), and 6 or 7 (4%).

3.2.3 Side Stop Purpose

The side-stop purpose is defined as the most common purpose for a long-distance trip across all side stops made during the trip. Seven side stop purpose categories are identified, and the kinds of stops included in each category are listed in Table 2.

The distribution of the side stop purposes in the sample is as follows: Work (21%), Sightsee (10%), Visit (30%), Relax (7%), Shop (8%), Personal Business (3%), and Required Stops (21%). These purpose categories constitute the discrete choice alternatives in the current paper.

4. MODEL STRUCTURE AND FORMULATION

In this paper, we formulate a mixed multinomial logit (or MMNL) model for the choice among the seven side stop purposes categories. The formulation allows correlation in common unobserved factors influencing the choice of side stop purpose (for example, unobserved attributes such as an intrinsic inclination toward leisure-type pursuits may increase the utilities of the sightseeing, visiting, and relaxing purposes). The choice probabilities in the MMNL structure do not have a closed-form expression, but can be estimated using well-established simulation techniques to approximate integrals (Bhat, 2006).

In the following discussion of the MMNL model structure, we suppress the notation for choice occasion (*i.e.* for long distance trips). Then, the utility U_i associated with an alternative i ($i = 1,2,\ldots,I$) may be written as:

$$U_i = \theta' x_i + \varepsilon_i \quad (1)$$

where x_i is a column vector of observed variables affecting the utility of alternative i (including a constant), θ is a corresponding column vector of coefficients, and ε_i is an unobserved random term that represents the idiosyncratic effect of omitted variables. ε_i is assumed to be independent of x_i.

Next, the error term ε_i may be partitioned into two components, ζ_i and $\mu' z_i$. The first component, ζ_i is assumed to be independently and identically standard Gumbel distributed across all alternatives. The second component in the error term, $\mu' z_i$, induces heteroscedasticity and correlation across unobserved utility components of the alternatives. z_i is specified to be a column vector of dimension M with each row representing a group m ($m = 1,2,\ldots,M$) of alternatives sharing common unobserved components. The row(s) corresponding to the group(s) of which i is a member take(s) a value of one and other rows take a value of zero. The vector μ (of dimension M) may be specified to have independent elements, each having a variance component σ_m^2. The result of this specification is a covariance of σ_m^2 among alternatives in group m, and heteroscedasticity across the groups of alternatives. Let σ be a parameter vector characterizing the variance-covariance matrix of the multivariate normal distribution of μ.

Equation (1) can be rewritten with the error component specifications just discussed as:

$$U_i = \theta' x_i + \mu' z_i + \zeta_i \quad (2)$$

Conditional on μ, the probability alternative i will be chosen can be written in the usual multinomial logit form:

$$P_i|(\mu) = \frac{e^{\theta' x + \mu' z_i}}{\sum_{j=1}^{I} e^{\theta' x + \mu' z_j}} \quad (3)$$

The unconditional probability can be subsequently obtained as:

$$P_i = \int_{\mu=-\infty}^{\infty} \frac{e^{\theta' x + \mu' z_i}}{\sum_{j=1}^{I} e^{\theta' x + \mu' z_j}} dF(\mu|\sigma) \quad (4)$$

where F is the multivariate cumulative normal distribution. The reader will note that the dimensionality in the integration above is dependent on the number of elements in the μ vector.

The parameters to be estimated in the model of Equation (4) are the θ and σ vectors. To develop the likelihood function for parameter estimation, we assume independence in side stop purpose choice across long-distance trips. Introducing the index q for long-distance trips, the log-likelihood function for the observed set of choices is:

$$L(\theta,\sigma) = \sum_{q}\sum_{i} Y_{qi} \ln\left[\int_{\mu=-\infty}^{\infty} \frac{e^{\theta' x_q + \mu' z_i}}{\sum_{j=1}^{I} e^{\theta' x_q + \mu' z_j}} dF(\mu|\sigma)\right] \quad (5)$$

where Y_{qi} is a dummy variable taking the value of 1 if the most common side stop purpose of the q^{th} long-distance trip is i, and 0 otherwise.

We apply quasi-Monte Carlo simulation techniques to approximate the integrals in the likelihood function and maximize the logarithm of the resulting simulated likelihood function across all individuals with respect to θ and σ. Under rather weak regularity conditions, the maximum (log) simulated likelihood (MSL) estimator is consistent, asymptotically efficient, and asymptotically normal. In the current paper, we use the Halton sequence to draw realizations for μ from its population normal distribution. Details of the Halton sequence and the procedure to generate this sequence are available in Bhat (2003). We tested the sensitivity of parameters estimated with different numbers of Halton draws per observation, but obtained stable results with as few as 100 draws. In this analysis, we used 125 draws per observation in the estimation.

5. RESULTS AND DISCUSSION

The final specification results of the side stop purpose model include several variables that characterize the long-distance trip and the traveler's household. This final specification was based on intuitive and statistical fit considerations, and is presented in Table 3. The variables are included with the 'Work" category being the base (*i.e.,* the coefficients of the variables in the "Work" category is normalized to zero). Thus, "Work" does not appear as a column in Table 3. In cases were a '-' appears for the coefficient estimate in a column, the corresponding column side stop purpose also serves as a base category along with the "Work" category.

5.1 Trip Characteristics

Among the trip characteristics (see Table 3), the variables corresponding to the primary purpose of the long-distance trip are introduced with the base primary purpose category being pleasure and work. The results indicate that individuals traveling for pleasure have a much higher propensity to pursue non-work purpose side stops relative to those traveling for both pleasure and work (note the positive coefficients for all the side stop purposes corresponding to the variable "travel for pleasure" in Table 3). On the other hand, as would be expected, individuals traveling long distances for work are less likely to pursue discretionary side stops associated with sightseeing, visiting, and shopping.

The travel party size and composition variables also have statistically significant effects on side stop purpose. The results in Table 3 reflect a much higher likelihood to participate in non-work side stops when there are several adults and/ or non-household members in the travel party. The same results holds when there are children in the travel party, though the children's effect is confined to an increase in the propensity to participate in the kid-friendly pursuits of sightseeing and visiting activities rather than for rest, shop, and personal business. Of course, as the travel party size grows, the propensity of required stops increases to accommodate the biological and physiological needs of the several different individuals in the party.

The final category of variables under trip characteristics corresponds to the nature of the long-distance travel. The results indicate that, in general, long-distance trips that begin on weekends, that are long-term planned vacations, and that involve more nights away from the primary destination are more likely to include non-work side stops than long-distance trips that begin on weekdays, that are pursued not as part of a planned vacation, and that involve fewer number of nights away from the primary destination, respectively. Also, long-distance trips involving more number of nights at the primary destination are more likely to include visit, shop, and required stops than sightsee, rest, and personal business stops. This may be the result of individuals consciously choosing to pursue the latter kinds of activities at the primary destination where they have more time to spend. Finally, as the total trip distance increases, travelers are more likely to choose sightseeing and required stops, and less likely to choose visit and shop side stops relative to work, rest, and personal side stops. This result is interesting and suggests that, as the distance gets longer, the travel party is less likely to pursue the relatively "superfluous"

stops of visiting and shopping, and more likely to pursue required and sightseeing stops that are more natural ways of breaking up a trip.

5.2 Household Characteristics

The variables corresponding to household characteristics in the final specification are related to race. Caucasian Americans are less likely to choose sightseeing side stops than any other type of side stop, relative to other races (including African Americans). African Americans, however, are more likely to make visit, shop, or personal side stops, relative to other races (including Caucasian Americans). These race-related effects need to be explored further in future studies.

5.3 Unobserved Correlation Effects

In our analysis, we considered several error component specifications, but the one that provided the best result included a single error component specific to the shopping, personal business, and required stop categories. The variance of this error term is 3.321, with the t-statistics relative to a value of 0 being 6.20. Thus, the results indicate the presence of significant unobserved trip and household-level factors that intrinsically increase the utilities of shopping, personal business, and required stops.

5.4 Overall Measure of Fit

The log-likelihood value at convergence of the final mixed multinomial logit (MMNL) specification is –16,666.2. The log-likelihood value of the market share model is –20,530.3 and the log-likelihood value of a simple multinomial logit (MNL) model is –16,701.40. The additional parameter estimated in the MMNL model, relative to the MNL model, is the variance of the common error component affecting the utilities of Shop, Personal Business, and Required side stops. The likelihood ratio test value for comparing the MMNL model with the MNL model is 70.4, which is substantially greater than the critical chi-squared value with 1 degree of freedom for any reasonable level of significance. Thus, the test between the MMNL and MNL model very strongly rejects the absence of unobserved correlation between the utilities of Shop, Personal Business, and Required side stops. Also, a likelihood ratio test value for comparing the MMNL model and the market share model is 7728, which is much higher than the chi squared table value with 52 degrees of freedom at any reasonable level of significance.

An adjusted $\bar{\rho}_c^2$ value may be computed for the MMNL model as:

$$\bar{\rho}_c^2 = 1 - \frac{L(\hat{\beta}) - K}{L(c)} \quad (6)$$

where $L(\hat{\beta})$ is the MMNL model's convergent log-likelihood value (= –16,666.2), K is the number of estimated parameters in the MMNL model excluding the constants (= 52), and *L(c)* is the market share log-likelihood value (= –20,530.3). The resulting $\bar{\rho}_c^2$ value is 0.186.

5.5 Elasticity Effects of Exogenous Variables

The parameters on the exogenous variables in Table 3 do not directly provide the magnitude of the effects of variables on the choice probabilities of each side stop purpose. To address this issue, we compute the aggregate-level "elasticity effects" of variables.

To compute an aggregate-level "elasticity" of an ordinal exogenous variable, such as the number of adults in the travel party, we increase the values of the ordinal variable by 1 unit for each observation and obtain the relative change in expected aggregate shares. Thus, the "elasticities" for the ordinal exogenous variables can be viewed as the relative change in expected aggregate shares due to an increase of 1 unit in the ordinal variable across all households. To compute an aggregate-level "elasticity" of a dummy exogenous variable, such as whether the travel is for pleasure or not, we change the value of the variable to one for the subsample of observations for which the variable takes a value of zero and to zero for the subsample of observations for which the variables takes a value of one. We then sum the shifts in expected aggregate shares in the two subsamples after reversing the sign of the shifts in the second subsample and compute an effective proportional change in expected aggregate shares in the entire sample due to a change in the dummy variable from 0 to 1.

The elasticity effects are presented in Table 4 by variable category. As can be observed from the table, the most important determinants of side stop choice are the primary purpose of the long-distance trip and whether the trip is a planned vacation or not.

6. CONCLUSIONS AND FUTURE RESEARCH

An analysis of side stops during long-distance travel is an important research area that has applications in both land use development and travel behavior. Previous research efforts in long-

distance travel-related studies and leisure travel-related studies have identified overarching characteristics of long-distance and leisure travel, respectively, but no research has explicitly analyzed side stops made during such travel. The current research study contributes to this gap in the literature.

The empirical analysis uses the 1995 American Travel Survey household data to identify the trip and household characteristics that influence the most common type of side stop a travel party will make during their long-distance travel. The mixed multinomial logit estimation results are logical, intuitive, and interesting. The factors that play the largest role in determining side stop choice are the primary trip purpose and whether the trip is a planned vacation or not.

The model estimated in our research can be used in a variety of ways to better understand the link between transportation and land use. If planners are able to determine, through external station surveys and other means, the travel and household characteristics of people traveling through a certain corridor, this model can be used to identify the most important kind of development needed on those corridors. Overall, a better understanding of side stops helps to improve long distance travel experiences and helps to manage demand for long distance travel.

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LIST OF TABLES

TABLE 1 Stop Purpose by Number of Side Stops

1 Stop Total Trips: 20 (0.2%)		**2 Stops** Total Trips: 8610 (73.3%)		**3 Stops** Total Trips: 1905 (16.2%)		**4 Stops** Total Trips: 1210 (10.3%)	
Number of Trips that include a stop to…		*Number of Trips that include a stop to…*		*Number of Trips that include a stop to…*		*Number of Trips that include a stop to…*	
Work	10 (50%)	Work	1567 (18%)	Work	544 (29%)	Work	414 (34%)
Sightsee	0 (0%)	Sightsee	719 (8%)	Sightsee	319 (17%)	Sightsee	376 (31%)
Visit	5 (25%)	Visit	2859 (33%)	Visit	617 (32%)	Visit	403 (33%)
Relax	1 (5%)	Relax	623 (7%)	Relax	198 (10%)	Relax	157 (13%)
Shop	0 (0%)	Shop	737 (9%)	Shop	211 (11%)	Shop	63 (5%)
Personal Business	1 (5%)	Personal Business	331 (4%)	Personal Business	69 (4%)	Personal Business	46 (4%)
Required Stops	3 (15%)	Required Stops	1868 (22%)	Required Stops	606 (32%)	Required Stops	442 (37%)
Number of Trips that have…		Number of Trips that have…		Number of Trips that have…		Number of Trips that have…	
1 Side Stop Purpose	100%	1 Side Stop Purpose	99%	1 Side Stop Purpose	65%	1 Side Stop Purpose	65%
		2 Side Stop Purposes	1%	2 Side Stop Purposes	35%	2 Side Stop Purposes	24%
				3 Side Stop Purposes	0%	3 Side Stop Purposes	11%
						4 Side Stop Purposes	< 0.5%

TABLE 2 Side Stop Purpose Alternative Descriptions

Work	
Focus On:	Any work or school related activity
Includes:	Business Combined Business/ Pleasure Convention, Conference, or Seminar School Related Activity
Sightsee	
Focus On:	Any activity that the travelers experience the surrounding environment
Includes:	Sightseeing, Or To Visit a Historic or Scenic Attraction Outdoor Recreation (Sports, Hunting, Fishing, Boating, Camping, Etc.)
Visit	
Focus On:	Any activity whose main purpose is to socialize with others
Includes:	Visit Relatives or Friends
Relax	
Focus On:	Any rest-driven activity
Includes:	Rest or Relaxation
Shop	
Focus On:	Any activity whose main purpose is to shop
Includes:	Shopping
Personal Business	
Focus On:	Any important personal event/ activity
Includes:	Personal, Family, or Medical (Wedding, Funeral, Health Treatment, Etc.)
Required Stops	
Focus On:	Any activity the travel party must take because it is necessary to continue travel
Includes:	Spend The Night Transfer From One Airplane To Another, One Train To Another, Etc. Change To A Different Type Of Transportation Drop Off Or Pick Up Passenger Use a Rest-Stop

TABLE 3 Effect of Variables on Propensity to Choose Side Stop Purposes

Explanatory Variables	Side Stop Purposes (relative to Work Alternative)											
	Sightsee		Visit		Rest		Shop		Personal Business		Required	
	Coeff.	*t-stat*	*Coeff.*	*t-stat*	*Coeff.*	*t-stat*	*Coeff.*	*t-stat*	*Coeff.*	*t-stat*	*Coeff.*	*t-stat*
Constant	-4.086	-12.78	-2.249	-10.37	-5.122	-25.56	-5.000	-6.94	-7.861	-12.36	-6.086	-9.61
Trip Characteristics												
Primary Purpose of Long-Distance Trip												
Travel for Pleasure	2.248	10.01	2.746	16.48	3.149	18.87	3.552	7.46	5.392	12.63	3.899	10.26
Travel for Work	-1.569	-4.76	-0.555	-3.07	-	-	-1.983	-6.08	-	-	-	-
Travel Party Composition												
Number of Adults in Travel Party	0.070	7.62	0.400	4.85	0.676	7.04	0.853	6.59	0.812	5.86	0.736	6.30
Number of Non-Household Members in Travel Party	0.322	5.15	0.164	2.79	0.264	4.28	0.334	4.90	0.278	3.64	0.368	5.58
Number of Children in Travel Party	0.275	5.75	0.161	3.97	-	-	-	-	-	-	0.060	1.30
Nature of Long-Distance Travel												
Travel on the Weekend	0.416	3.77	0.547	5.98	0.865	7.47	0.861	5.47	0.566	3.26	0.887	6.21
Travel for Vacation	1.619	13.28	0.492	5.21	0.751	6.13	0.213	1.19	-0.876	-4.44	-	-
Total Number of Nights Not at Primary Destination	0.039	3.53	0.074	7.60	0.096	10.27	-0.636	-7.82	0.068	4.18	-	-
Total Number of Nights at Primary Destination	-	-	0.018	1.97	-	-	0.722	8.51	-	-	0.134	8.12
Total Distance Traveled on Trip	0.059	2.26	-0.081	-3.69	-	-	-0.141	-1.85	-	-	0.352	8.40
Household Characteristics												
Household Race												
Caucasian	-0.272	-1.90	-	-	-	-	-	-	-	-	-	-
African American	-	-	0.671	4.07	-	-	1.060	4.62	1.011	3.213	-	-

TABLE 4 Elasticity Effects of Exogenous Variables

Explanatory Variables	Side Stop Purposes (relative to Work Alternative)						
	Work	**Sightsee**	**Visit**	**Rest**	**Shop**	**Personal Business**	**Required**
Constant							
Trip Characteristics							
Primary Purpose of Long-Distance Trip							
Travel for Pleasure	-0.029	-0.513	-0.016	0.500	-0.599	0.526	0.431
Travel for Work	1.196	-0.575	-0.275	-0.231	-0.622	-0.475	-0.440
Travel Party Composition							
Number of Adults in Travel Party	-0.161	0.160	-0.110	0.151	0.332	0.299	0.176
Number of Non-Household Members in Travel Party	-0.071	0.880	-0.054	0.037	0.104	0.049	0.124
Number of Children in Travel Party	-0.014	0.230	-0.051	-0.056	-0.046	-0.043	0.001
Nature of Long-Distance Travel							
Travel on the Weekend	-0.199	-0.166	-0.010	0.303	0.268	-0.030	0.269
Travel for Vacation	-0.193	0.890	0.028	0.278	-0.269	-1.520	-0.434
Total Number of Nights Not at Primary Destination	-0.011	0.012	0.053	0.073	-0.465	0.058	-0.014
Total Number of Nights at Primary Destination	-0.024	-0.074	-0.061	-0.074	0.781	-0.099	0.048
Total Distance Traveled on Trip	-0.012	0.014	-0.023	-0.028	-0.084	-0.056	0.245
Household Characteristics							
Household Race							
Caucasian	0.083	-0.047	-0.090	0.197	-0.295	-0.292	0.176
African American	-0.161	-0.172	0.240	-0.362	0.668	0.658	-0.325