

# What Drives Consumer Household Behavior in the Travel Market

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## Abstract

Historically, the two major drivers of consumer household behavior in the travel market have been: 1) Household income and 2) Age of householder (household head). In addition, two additional behavioral characteristics (psychographics) have explained anomalies in this behavior, namely, the householder's: a) Willingness (or desire) to try new things and b) Willingness (or desire) to spend. The following is a summary of the most recent findings just prior to the COVID pandemic: i) Household income remains the major positive driver of consumer spending on travel. ii) Age of householder (household head) remains the secondary driver of consumer spending on travel with travel spending peaking in households whose householders are aged 45 - 54 years. iii) Willingness (or desire) to try new things and willingness (or desire) to spend help to explain this peaking in travel spending by middle-aged householders. iv) These same householder attitudes are also key in the brands selected by traveling households.

## Keywords

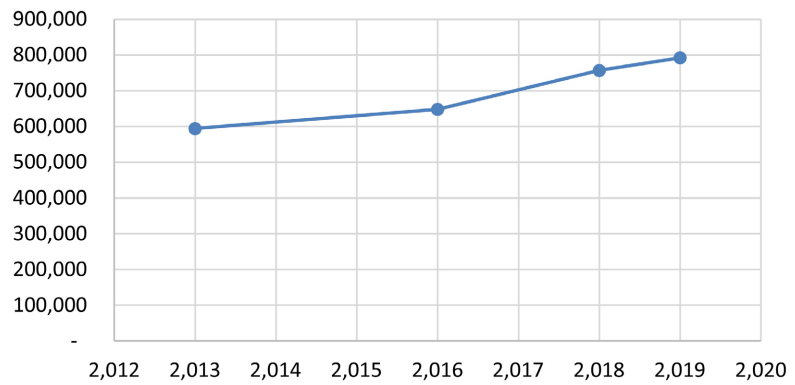
Consumer Economics, Consumer Household Spending, Travel Spending

## 1. Consumer Household Spending on Travel 2013-2019

According to the U.S. Travel and Tourism Satellite Accounts produced annually by the U.S. Department of Commerce Bureau of Economic Analysis (2013-2019), total spending on travel and tourism by all U.S. households has risen steadily between 2013 and 2019 as follows.

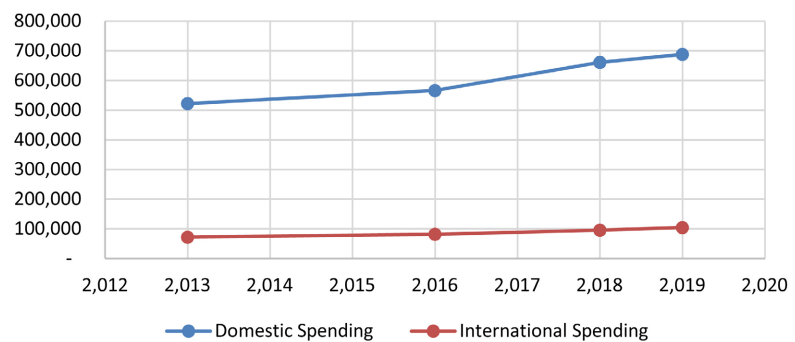
This is broken down into the domestic and international travel spending as follows:

Domestic Household Total Spending on Travel 2013-2019  
(in Mill \$)



Source: Bureau of Economic Analysis, U.S. Department of Commerce (2013-2019), U.S. Travel and Tourism Satellite Accounts.

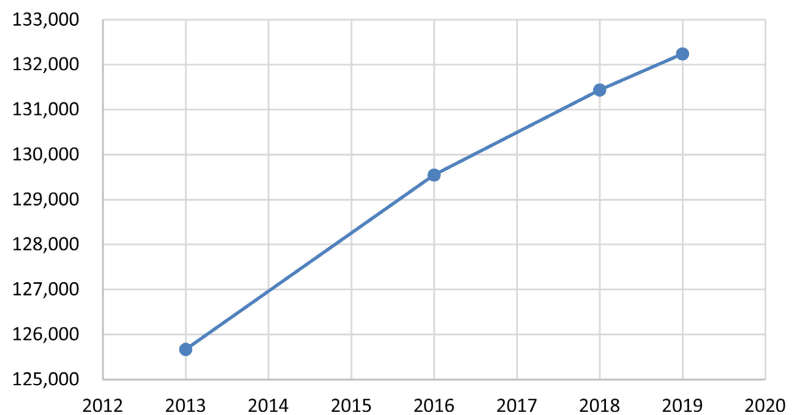
Domestic and International Travel Spending by Domestic Households 2013-2019



Source: Bureau of Economic Analysis, U.S. Department of Commerce (2013-2019), U.S. Travel and Tourism Satellite Accounts.

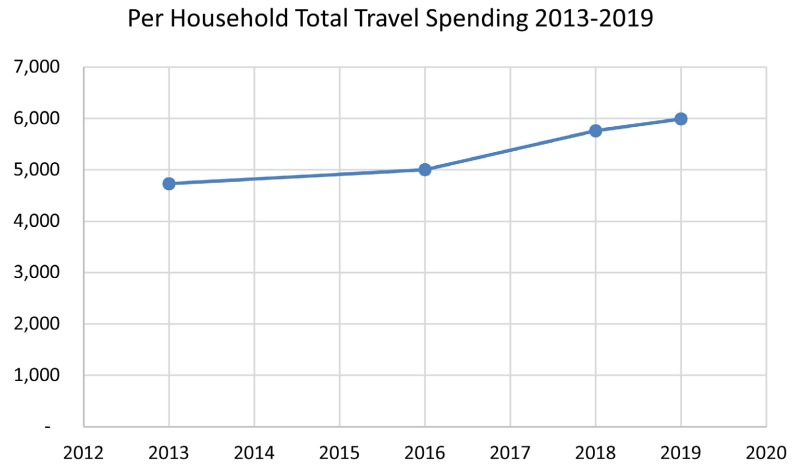
Domestic households grew as follows from 2013-2019:

Domestic Households (in 000s)



Source: Bureau of Labor Statistics, U.S. Department of Labor (2013-2019) Consumer Expenditure Surveys.

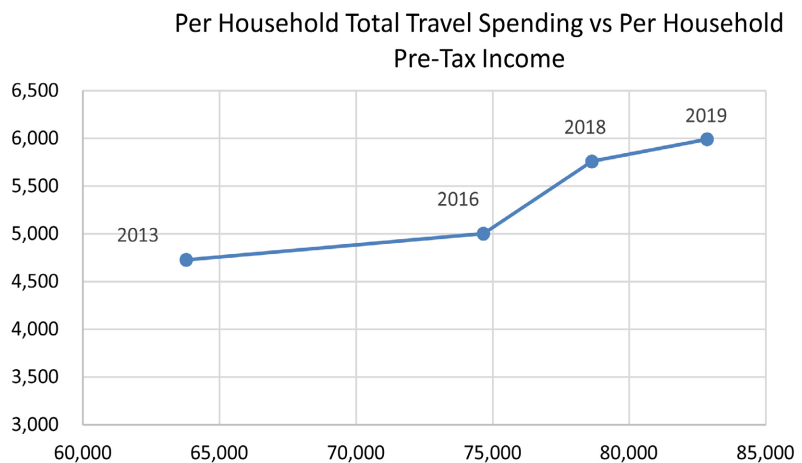
As a result, per household average spending on travel has risen between 2013 and 2019 as follows:



Sources: Bureau of Economic Analysis, U.S. Department of Commerce (2013-2019) U.S. Travel and Tourism Satellite Accounts; Bureau of Labor Statistics U.S. Department of Labor (2013-2019) Consumer Expenditure Surveys.

## 2. Relationship between Household Spending on Travel vs. Household Pre-Tax Income 2013-2019

The steady rise in per household spending on total travel from 2013 through 2019 has been accompanied by a similar steady rise in per household pre-tax income as follows:



Sources: Bureau of Economic Analysis, U.S. Department of Commerce (2013-2019) U.S. Travel and Tourism Satellite Accounts; Bureau of Labor Statistics U.S. Department of Labor (2013-2019) Consumer Expenditure Surveys.

This demonstrates that Per Household Travel Spending in the period 2013-2019 was reasonably correlated with Per Household Pre-Tax Income with a correlation coefficient of 92.3%.

We can also examine the impact of different pre-tax household incomes on

per household total travel spending in each of the calendar years 2013, 2016, 2018 and 2019.

### 3. Methodological Problems in Examining Impact of Pre-Tax Household Income on per Household Total Travel Spending in Each of the Calendar Years 2013, 2016, 2018 and 2019

In order to do this analysis in each of several calendar years, we will have to deal with two methodological problems:

- The spending categories and sub-categories of the annual Consumer Household Survey do not exactly match the annual Travel and Tourism Satellite Accounts
- The annual Consumer Household Survey analyzes its data by pre-tax household income quintiles, but the annual Travel and Tourism Satellite Accounts does not.
- The following assumptions were made by the author to deal with each of these problems:
- The Travel and Tourism Satellite Accounts were assigned to the categories and sub-categories of the Consumer Household Survey as follows.

Travel & Tourism Satellite Accounts	Categories and Sub-Categories of Consumer Household Spending							
	Other lodging	Food away from home/Alcoholic beverages	Public and other transportation	Vehicle rental, leases, licenses, and other charges	Maintenance and repairs	Entertainment	Gasoline, other fuels, and motor oil	Apparel/Personal care products and services/Reading/Tobacco/Misc
Traveler accommodations	X							
Food and beverage services		X						
Domestic passenger air transportation services			X					
International passenger air transportation services			X					
Passenger rail transportation services			X					
Passenger water transportation services			X					
Intercity bus transportation			X					
Intercity charter bus			X					
Intracity mass transit			X					
Taxicab and ride sharing			X					
Scenic and sightseeing transportation services			X					
Automotive vehicle rental				X				
Other vehicle rental				X				
Automotive repair services					X			
Parking lots and garages					X			
Highway tolls					X			
Travel arrangement and reservation services						X		
performing arts						X		
Spectator sports						X		
Participant sports						X		
Gambling						X		
All other recreation and entertainment						X		
Gasoline							X	
Shopping								X
All other commodities								X

Sources: Bureau of Economic Analysis, U.S. Department of Commerce (2013-2019) U.S. Travel and Tourism Satellite Accounts.

Given the following data from the 2013 Consumer Expenditure Survey for per household spending:

	All consumer units	Lowest 20 percent
Food away from home	\$2624	\$1143
Alcoholic beverages	\$444	\$167
Other lodging	\$649	\$140

Sources: Bureau of Labor Statistics, U.S. Department of Labor, Consumer Expenditure Surveys, 2013.

And the following data from the 2013 Travel and Tourism Satellite Accounts or other lodging while on travel:

	HH Total	Per
Travel Spending by All Consumer Households	(Mill \$)	Household
Other lodging	\$78,298	\$623

Sources: Bureau of Economic Analysis, U.S. Department of Commerce, U.S. Travel and Tourism Satellite Accounts, 2013.

The other lodging spending while on travel for the households in the lowest quintile of pre-tax household income was estimated as

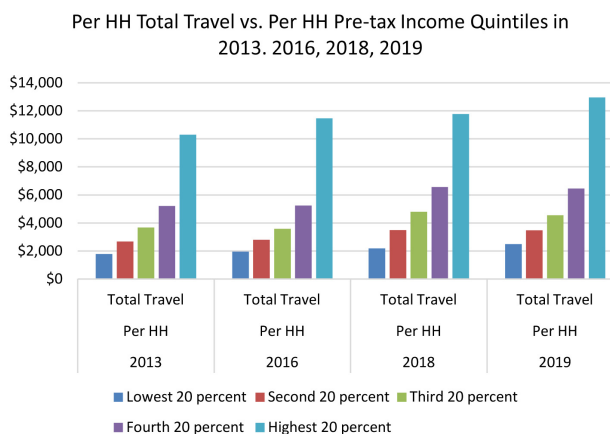
$$= (\$140/\$649) \times \$623 \text{ or } \$134 \text{ (from the above two tables).}$$

The complete computations for estimating the 2013 per household total travel spending for the households in each of the quintiles of pre-tax income is contained in **Appendix 1**. Methodology section of this paper.

The same computations were done for the additional years 2016, 2018 and 2019.

#### 4. Relationship between per Household Total Travel Spending and Per Household Pre-Tax Income in the Years 2013, 2016, 2018 and 2019

We see similar patterns of increasing per household total travel spending for pre-tax income quintiles in the years 2016, 2018 and 2019 as follows:



Sources: Bureau of Economic Analysis, U.S. Department of Commerce (2013-2019) U.S. Travel and Tourism Satellite Accounts; Bureau of Labor Statistics, U.S. Department of Labor (2013-2019) Consumer Expenditure Surveys.

The highest pre-tax income quintile dominated the total travel market with over 40% market share throughout the period 2013-2016 as follows:

	2013	2016	2018	2019
	Total Travel	Total Travel	Total Travel	Total Travel
Pre-Tax Household Income	Market Shr	Market Shr	Market Shr	Market Shr
Lowest 20 percent	8%	8%	8%	8%
Second 20 percent	11%	11%	12%	12%
Third 20 percent	16%	14%	17%	15%
Fourth 20 percent	22%	21%	23%	21%
Highest 20 percent	43%	46%	41%	43%
Total	100%	100%	100%	100%
	2013	2016	2018	2019
	Total Travel	Total Travel	Total Travel	Total Travel
Pre-Tax Household Income	(in Mill \$)	(in Mill \$)	(in Mill \$)	(in Mill \$)
Lowest 20 percent	\$44,911	\$50,623	\$57,310	\$65,843
Second 20 percent	\$67,391	\$72,839	\$91,869	\$91,785
Third 20 percent	\$92,166	\$92,715	\$125,416	\$121,095
Fourth 20 percent	\$131,274	\$135,822	\$171,983	\$170,115
Highest 20 percent	\$258,482	\$296,096	\$310,353	\$343,546
Total	\$594,224	\$648,095	\$756,931	\$792,386

Sources: Bureau of Economic Analysis, U.S. Department of Commerce (2013-2019) [U.S. Travel and Tourism Satellite Accounts](#), Bureau of Labor Statistics, U.S. Department of Labor (2013-2019) [Consumer Expenditure Surveys](#).

The number of consumer households in each pre-tax income quintile grew gradually between 2013 and 2019 as follows:

Number of Consumer Households	2013	2016	2018	2019
Lowest 20 percent	25,090	25,884	26,333	26,367
Second 20 percent	25,219	26,019	26,315	26,387
Third 20 percent	25,082	25,905	26,196	26,578
Fourth 20 percent	25,178	25,900	26,221	26,375
Highest 20 percent	25,101	25,842	26,374	26,536
Total	125,670	129,549	131,439	132,242

Sources: Bureau of Labor Statistics, U.S. Department of Labor (2013-2019) [Consumer Expenditure Surveys](#).

### 5. Conclusions about Impact of Pre-Tax Income on Consumer Household Total Spending on Travel

Consumer household pre-tax income has a significant impact on consumer spending on total spending on travel as follows:

- This is seen in 2013, 2016, 2018 and 2019 by examining the behavior of the households of various pre-tax income levels.
- This is seen over time between 2013 and 2019 in the growth of average spending per household vs. the average pre-tax income per household.

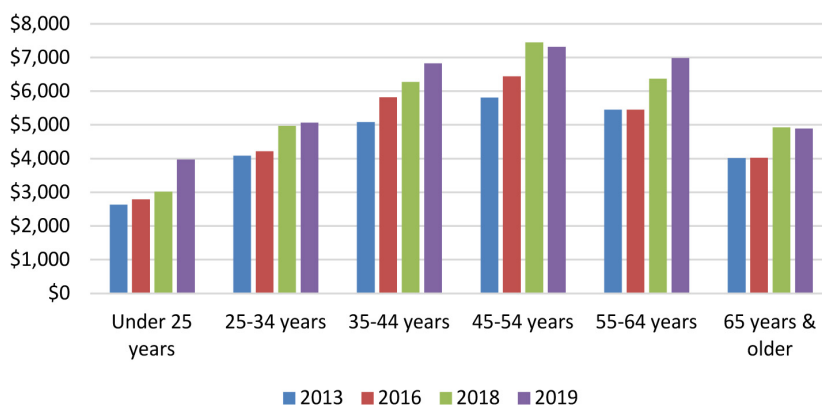
### 6. Analysis about the Relationship between per Household Total Travel Spending and Age of Reference Person during 2013 and 2019

Past research by the author for various hotel management companies found that the age of the head of household (now called age of reference person) also had an impact on the travel spending by that household. Let us examine that government spending data for 2013 to 2019.

### 7. Relationship between per Household Total Travel Spending and Age of Reference Person in the Years 2016, 2018 and 2019

We see similar patterns of increasing per household total travel spending peaking for the age of reference person of 45 - 54 years of age in the years 2016, 2018 and 2019 as follows:

Per HH Total Travel vs. Age of Reference Person in 2013, 2016, 2018, 2019



Sources: Bureau of Economic Analysis, U.S. Department of Commerce (2013-2019) U.S. Travel and Tourism Satellite Accounts, Bureau of Labor Statistics, U.S. Department of Labor (2013-2019) Consumer Expenditure Surveys.

Households with reference persons 45 - 54 years of age had the highest market share of the travel market in 2013-2018, with households with reference persons 55 - 64 years of age having the highest market share in 2019.

	2013	2016	2018	2019
	Total Travel	Total Travel	Total Travel	Total Travel
Age of Reference Person	Market Shr	Market Shr	Market Shr	Market Shr
Under 25 years	4%	3%	3%	4%
25 - 34 years	14%	14%	14%	14%
35 - 44 years	18%	19%	18%	19%
45 - 54 years	24%	24%	23%	21%
55 - 64 years	21%	21%	21%	22%
65 years & older	19%	19%	22%	21%
Total	100%	100%	100%	100%

	2013	2016	2018	2019
	Total Travel	Total Travel	Total Travel	Total Travel
Age of Reference Person	(in Mill \$)	(in Mill \$)	(in Mill \$)	(in Mill \$)
Under 25 years	\$21,786	\$20,352	\$22,911	\$29,096
25 - 34 years	\$84,558	\$88,078	\$105,753	\$107,593
35 - 44 years	\$108,112	\$124,894	\$137,946	\$152,434
45 - 54 years	\$142,414	\$154,877	\$171,708	\$163,035
55 - 64 years	\$124,832	\$134,243	\$155,863	\$171,494
65 years & older	\$112,522	\$125,649	\$162,750	\$168,734
Total	\$594,224	\$648,094	\$756,931	\$792,386

Sources: Bureau of Economic Analysis, U.S. Department of Commerce (2013-2019) [U.S. Travel and Tourism Satellite Accounts](#), Bureau of Labor Statistics, U.S. Department of Labor (2013-2019) [Consumer Expenditure Surveys](#).

The number of households with reference persons in each bracket changed during 2013-2019 as follows:

Age of Reference Person	2013	2016	2018	2019
Under 25 years	8275	7306	7588	7328
25 - 34 years	20,707	20,872	21,298	21,232
35 - 44 years	21,257	21,458	22,000	22,330
45 - 54 years	24,501	24,054	23,050	22,282
55 - 64 years	22,887	24,641	24,480	24,565
65 years & older	28,042	31,217	33,023	34,505
Total	125,670	129,549	131,439	132,242

Sources: Bureau of Labor Statistics, U.S. Department of Labor, [Consumer Expenditure Surveys](#), 2013-2019.



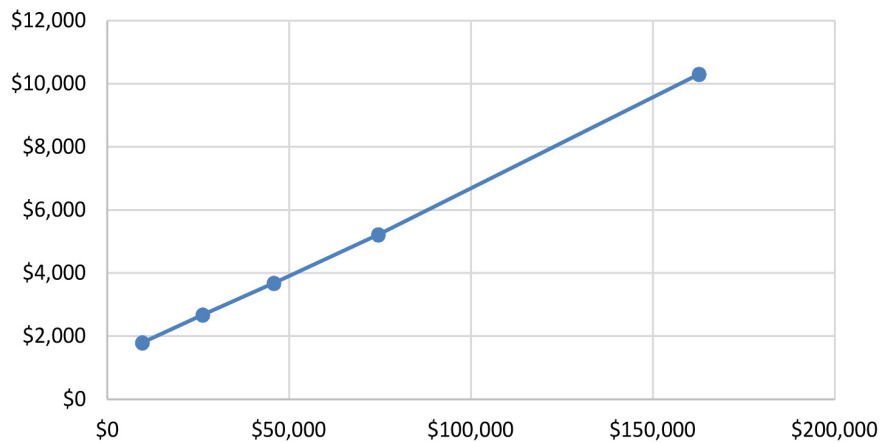
With only the 65 years & older showing significant growth.

### 8. How Much of per Household Travel in Households with Different Ages of Reference Persons Is Explained by Income

Let us try to estimate how much of per household travel in households with different ages of reference persons is explained by income:

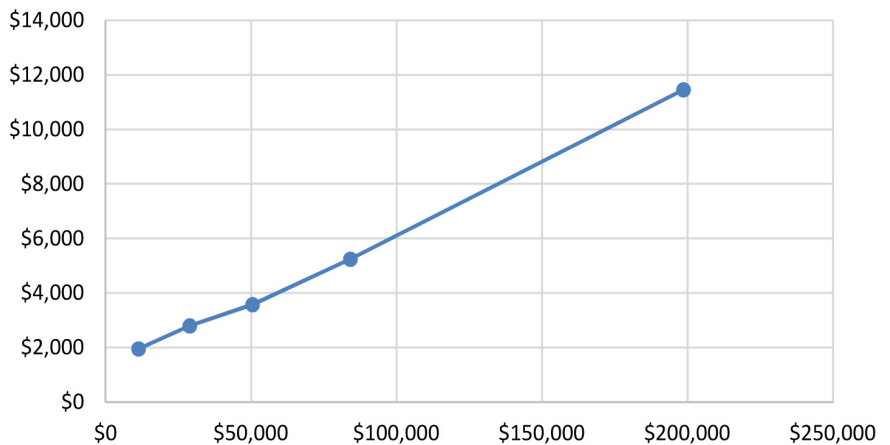
1) The following were the per-household travel data for households in different pre-tax income quintiles:

2013 Per HH Total Travel vs. Quintiles of HH Pre-Tax Income



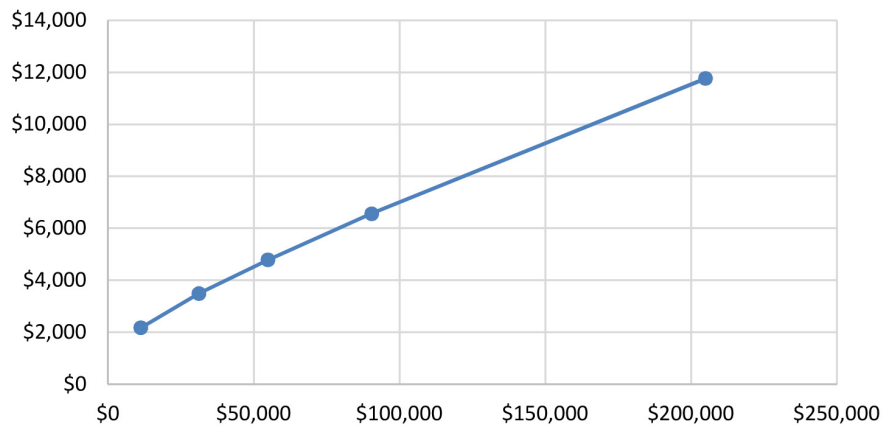
Sources: Bureau of Economic Analysis, U.S. Department of Commerce, [U.S. Travel and Tourism Satellite Accounts](#), 2013, Bureau of Labor Statistics, U.S. Department of Labor, [Consumer Expenditure Surveys](#), 2013.

2016 Per HH Total Travel vs. Quintiles of HH Pre-Tax Income



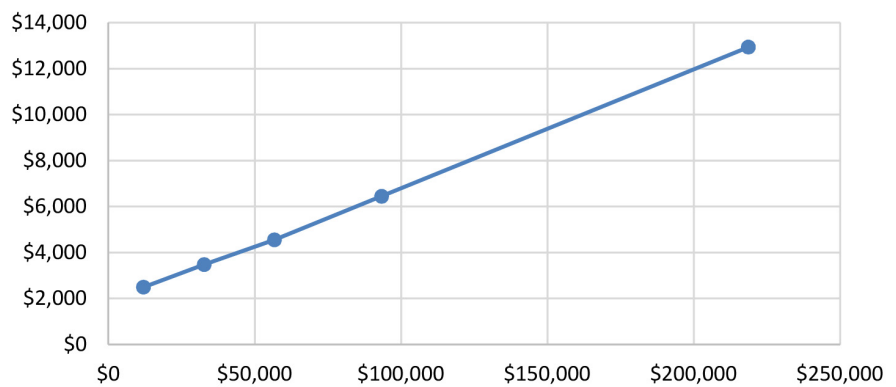
Sources: Bureau of Economic Analysis, U.S. Department of Commerce, [U.S. Travel and Tourism Satellite Accounts](#), 2016, Bureau of Labor Statistics, U.S. Department of Labor, [Consumer Expenditure Surveys](#), 2016.

2018 Per HH Total Travel vs. Quintiles of HH Pre-Tax Income



Sources: Bureau of Economic Analysis, U.S. Department of Commerce, U.S. Travel and Tourism Satellite Accounts, 2018, Bureau of Labor Statistics, U.S. Department of Labor, Consumer Expenditure Surveys, 2018.

2019 Per HH Total Travel vs. Quintiles of HH Pre-Tax Income



Sources: Bureau of Economic Analysis, U.S. Department of Commerce, U.S. Travel and Tourism Satellite Accounts, 2019, Bureau of Labor Statistics, U.S. Department of Labor, Consumer Expenditure Surveys, 2019.

2) Using the above graphs, estimate the per HH travel based on the average HH pre-tax income of each age of reference person category:

	2013		2016		2018		2019	
	Average HH Income	Estimated Income-Based Travel	Average HH Income	Estimated Income-Based Travel	Average HH Income	Estimated Income-Based Travel	Average HH Income	Estimated Income-Based Travel
Reference Person <25 years	\$27,914	\$2756	\$58,141	\$3954	\$32,268	\$3548	\$38,120	\$3719
Reference Person 25 - 34 years	\$59,002	\$4381	\$66,470	\$4367	\$74,082	\$5743	\$76,187	\$5560

**Continued**

Reference Person 35 - 44 years	\$78,385	\$5420	\$92,576	\$5700	\$96,581	\$6837	\$103,272	\$6962
Reference Person 45 - 54 years	\$78,879	\$5464	\$99,423	\$6072	\$109,366	\$7418	\$107,094	\$7161
Reference Person 55 - 64 years	\$74,182	\$5194	\$80,474	\$5061	\$88,342	\$6453	\$99,606	\$6772
Reference Person 65 + years	\$45,157	\$3640	\$48,035	\$3488	\$51,624	\$4608	\$55,656	\$4506

Sources: Bureau of Economic Analysis, U.S. Department of Commerce (2013-2019) U.S. Travel and Tourism Satellite Accounts, Bureau of Labor Statistics, U.S. Department of Labor (2013-2019) Consumer Expenditure Surveys.

3) The ratio of the actual per household travel expenses to the estimated income-based per household travel for the various ages of reference persons represents a mixture of the following factors:

- a) Number of adults in those households, particularly those aged 18 - 64;
- b) Number of children under age 18 in those household;
- c) The desire to travel in those households based on two attitudinal characteristics:
  - i) Willingness or desire to try new things and;
  - ii) Willingness or desire to spend money;

Age of Reference Person	Ratio of Actual per hh Total Travel to Income-Based per HH Total Travel Expense				
	2013	2016	2018	2019	Average
Reference Person <25 years	0.96	0.70	0.85	1.07	0.89
Reference Person 25 - 34 years	0.93	0.97	0.86	0.91	0.92
Reference Person 35 - 44 years	0.94	1.02	0.92	0.98	0.96
Reference Person 45 - 54 years	1.06	1.06	1.00	1.02	1.04
Reference Person 55 - 64 years	1.05	1.08	0.99	1.03	1.04
Reference Person 65 + years	1.10	1.15	1.07	1.09	1.10

Sources: Bureau of Economic Analysis, U.S. Department of Commerce (2013-2019) U.S. Travel and Tourism Satellite Accounts, Bureau of Labor Statistics, U.S. Department of Labor (2013-2019) Consumer Expenditure Surveys.

4) The following is information about the composition of the households in 2013, 2016, 2018 and 2019:

Household Composition	Age of Reference Person						
	All consumer units	Under 25 years	25 - 34 years	35 - 44 years	45 - 54 years	55 - 64 years	65 years and older
	2.5	2.0	2.7	3.4	2.8	2.2	1.8

**Continued**

People	0.6	0.4	1.0	1.4	0.7	0.2	0.1
Children under 18	1.9	1.6	1.8	2.0	2.2	2.0	1.7
Adults 18 and over	0.4	0.0	0.0	0.0	0.1	0.1	1.4
Adults 65 and older	1.5	1.6	1.8	2.0	2.1	1.9	0.3
Adults 18 - 64	1.3	1.3	1.5	1.7	1.8	1.4	0.5

Source: Bureau of Labor Statistics, U.S. Department of Labor (2013-2019) Consumer Expenditure Surveys.

Observations about the above table are as follows:

- The presence of younger children is likely to dampen travel spending of the households with reference persons 25 - 34 and 35 - 44 years of age.
- The presence of more adults 18 - 64 years of age would stimulate the travel spending of households with reference persons 45 - 54 and 55 - 64 years of age.

5) Finally, the author's past research in travel behavior starting in 1979 indicated that two attitudinal characteristics had an impact on the household travel behavior:

- a) Willingness or desire to try new things and;
- b) Willingness or desire to spend money.

## 9. Past Research into Impact on Travel Behavior of Household Attitudinal Characteristics

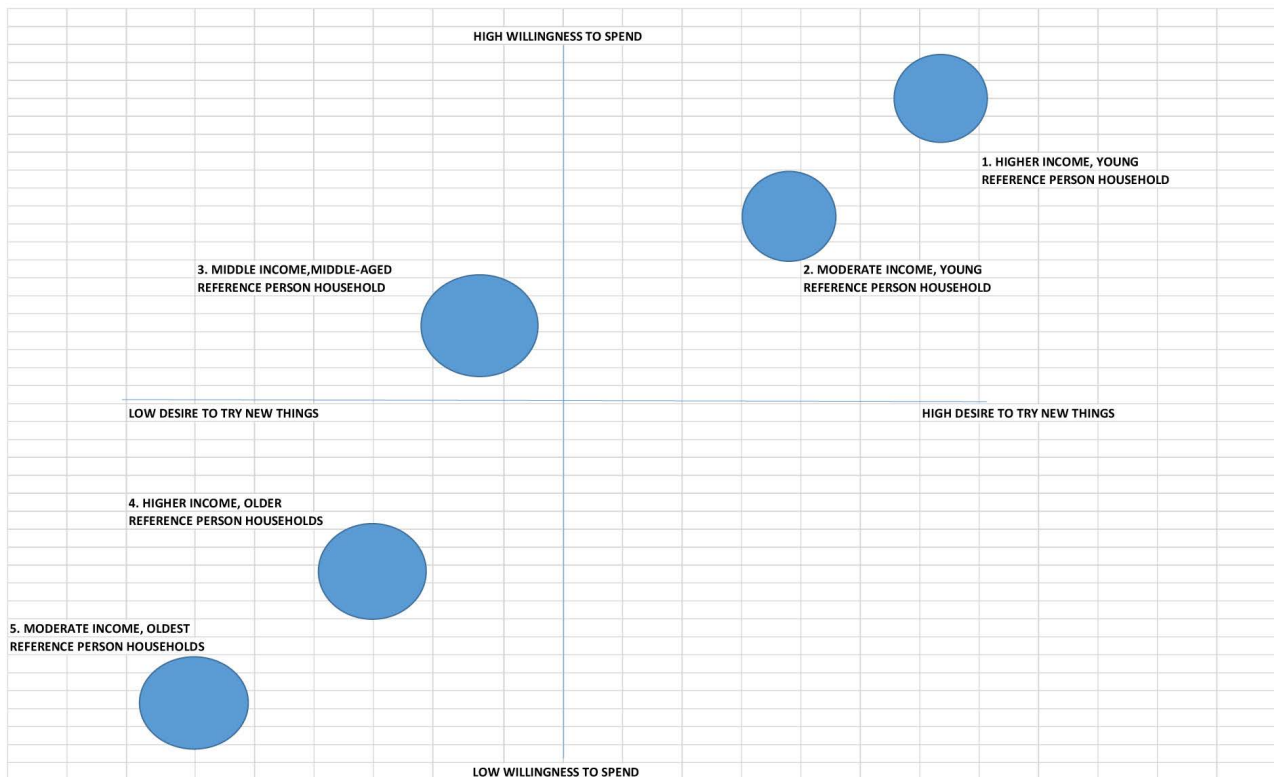
The author did a very large market research study of 2200 households to support a strategic planning review for Holiday Inns, Inc. At that time, we found several apparently anomalous results:

- Younger households, whatever their household income, were spending more on their travel than their income would indicate.
- Older households, whatever their household income, were spending less on their travel than their income would indicate.

As a result, the author consulted with Paul Hase, Director of Market Research for Johnson & Johnson, who had just completed a large Consumer Life Style Study, asking about 100 questions of the respondents. The author found that about 20 questions measured each of two important attitudinal characteristics:

- Willingness or desire to try new things and;
- Willingness or desire to spend money.

And accordingly re-analyzed the data using cluster analysis with the following results.



Source: Temple, Barker & Sloane analysis of hotel market samples, 1979-1990.

Cluster	Desire to Try New Things	Willingness to Spend	HH Income	Age of HH Reference Person	HH Total Travel Spending	Children Under 18	Lifestyle Descriptor
1	Highest	Highest	Higher	Younger	Very high	Few	Me Now
2	High	High	Moderate	Younger	Some-what High	Few	Me Too
3	Moderate	Moderate	Middle	Middle	Moderate	Many	Family Builder
4	Moderate	Low	Higher	Older	Moderate	Some	Comfortable Conservative
5	Lowest	Lowest	Moderate	Oldest	Low	None	Used To

Source: Temple, Barker & Sloane analysis of hotel market samples, 1979-1990.

The following kinds of questions were used to determine a household’s “Desire to Try New Things”:

- We are always the first on our block to try new things.
- We prefer to vacation in less “civilized” destinations.

The following kinds of questions were used to determine a household’s “Willingness to Spend Money”:

- We prefer to travel first-class whenever we can.
- We usually stay at luxury hotels.

Client confidentiality prevents the author from providing a more complete list

of questions.

## 10. Changes over Time in Household Desire to Try New Things and Willingness to Spend

Similar lifestyle attitudinal studies were done by the author between 1980 and 2004 measuring consumer behavior in travel and other discretionary purchasing areas: jewelry, consumer home electronics, automobiles with success. However, lifestyle attitudes did change over time as follows:

- Household selection of travel brands and destinations depended on these lifestyle attitudes as well as the sheer volume of travel spending.
- There was a significant increase in the desire to try new things and willingness to spend.
  - Older households with reference persons over 45.
  - Households with children still living at home, particularly older children.
- This is confirmed by the analysis of spending on travel in the 2013-2019 period as being primarily driven by household income and secondarily by stage of household maturity.
- There was a continued growth in household spending on “experience” vs. acquisition of physical assets, benefitting the travel and tourism sector.

## 11. Need for Continued Research in the Drivers of Household Spending on Travel

However, we need to recognize that lifestyle attitudes are not static. It is important that we continue to measure these changes in our consumer/household research. This will lead to more intelligent:

- Capacity planning;
- Brand management/market segmentation;
- Product design and positioning;
- Service quality management;

## Conflicts of Interest

The author declares no conflicts of interest regarding the publication of this paper.

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## Appendix 1. Methodology: Relationship between per Household Total Travel Spending and per Household Pre-Tax Income

### *Analysis of Relationship between Per Household Total Travel Spending and per Household Pre-Tax Income in the Year 2013*

The Consumer Expenditure Survey published annually by the Bureau of Labor Statistics of the Department of Commerce. It is based on diary and interview samples of 12,000 households.

One of the ways the resultant data is analyzed is by household pre-tax income quintiles. In 2013, the following top-line results were determined by pre-tax income quintiles:

	All consumer units	Lowest 20 percent	Second 20 percent	Third 20 percent	Fourth 20 percent	Highest 20 percent
Number of consumer units (in thousands)	125,670	25,090	25,219	25,082	25,178	25,101
Income before taxes	\$63,784	\$9,658	\$26,275	\$45,826	\$74,546	\$162,720
Income after taxes	\$56,352	\$10,092	\$26,764	\$43,592	\$67,344	\$134,044
Average annual expenditures	\$51,093	\$22,521	\$32,757	\$42,482	\$59,116	\$99,295

Sources: Bureau of Labor Statistics, U.S. Department of Labor, [Consumer Expenditure Surveys](#), 2013.

The expenditures per household were broken down into:

- 14 spending categories (such as food, shelter, transportation);
- 63 spending sub-categories (such as food away from home, rented dwellings, vehicle purchases).

The categories and subcategories of household spending directly involved in the purchase of travel in 2013 by pre-tax income quintiles were the following:

	All consumer units	Lowest 20 percent	Second 20 percent	Third 20 percent	Fourth 20 percent	Highest 20 percent
Food away from home	\$2,624	\$1,143	\$1,564	\$2,129	\$3,180	\$5,138
Alcoholic beverages	\$444	\$167	\$276	\$358	\$505	\$919
Other lodging	\$649	\$140	\$250	\$331	\$650	\$1,878
Public and other transportation	\$537	\$161	\$250	\$374	\$492	\$1,409

**Continued**

Vehicle rental, leases, licenses, and other charges	\$533	\$149	\$285	\$430	\$630	\$1,174
Maintenance and repairs	\$835	\$326	\$611	\$703	\$1,033	\$1,506
Entertainment	\$2,482	\$1,007	\$1,417	\$2,001	\$2,872	\$5,134
Gasoline, other fuels, and motor oil	\$2,611	\$1,229	\$1,857	\$2,616	\$3,296	\$4,068
Apparel and services	\$1,603	\$723	\$1,044	\$1,333	\$1,871	\$3,060
Personal care products and services	\$608	\$274	\$414	\$503	\$707	\$1,148
Reading	\$102	\$37	\$68	\$84	\$118	\$207
Tobacco products and smoking supplies	\$330	\$291	\$319	\$362	\$398	\$282
Miscellaneous	\$645	\$291	\$391	\$526	\$739	\$1,279

Sources: Bureau of Labor Statistics, U.S. Department of Labor, [Consumer Expenditure Surveys](#), 2013.

The travel spending by all consumer households in 2013 were broken down into the following spending components in the Bureau of Economic Analysis Travel and Tourism Satellite Accounts as follows:

	HH Total	Per
Travel by All Consumer Households	(Mill \$)	Household
Traveler accommodations	\$78,298	\$623
Food and beverage services	\$49,021	\$390
Domestic passenger air transportation services	\$67,779	\$539
International passenger air transportation services	\$24,514	\$195
Passenger rail transportation services	\$833	\$7
Passenger water transportation services	\$15,064	\$120
Intercity bus transportation	\$902	\$7
Intercity charter bus transportation	\$1744	\$14
Intracity mass transit	\$2814	\$22
Taxicab and ride sharing service	\$1489	\$12
Scenic and sightseeing transportation services	\$2265	\$18
Automotive vehicle rental	\$5843	\$46
Other vehicle rental	\$77	\$1
Automotive repair services	\$6912	\$55
Parking lots and garages	\$1208	\$10
Highway tolls	\$482	\$4



**Continued**

Travel arrangement and reservation services	\$17,335	\$138
Motion pictures and performing arts	\$12,807	\$102
Spectator sports	\$2890	\$23
Participant sports	\$12,160	\$97
Gambling	\$35,318	\$281
All other recreation and entertainment	\$8870	\$71
Gasoline	\$84,577	\$673
Shopping	\$89,047	\$709
All other commodities	\$0	\$0
Total demand less travel by U.S. residents abroad	\$522,249	\$4156
Travel by U.S. residents abroad	\$71,975	\$573
Total demand	\$594,224	\$4728

Sources: Bureau of Economic Analysis, U.S. Department of Commerce, U.S. Travel and Tourism Satellite Accounts, 2013.

These components can be assigned to the consumer household categories and sub-categories as follows:

	HH Total	Per
Travel Spending by All Consumer Households	(Mill \$)	Household
Other lodging	\$78,298	\$623
Food away from home/Alcoholic beverages	\$49,021	\$390
Public and other transportation	\$117,404	\$934
Vehicle rental, leases, licenses, and other charges	\$5920	\$47
Maintenance and repairs	\$8602	\$68
Entertainment	\$89,380	\$711
Gasoline, other fuels, and motor oil	\$84,577	\$673
Apparel/Personal care products and services/Reading/Tobacco/Misc	\$89,047	\$709
Total demand less travel by U.S. residents abroad	\$522,249	\$4156
Travel by U.S. residents abroad	\$71,975	\$573
Total demand	\$594,224	\$4728

Sources: Bureau of Economic Analysis, U.S. Department of Commerce, U.S. Travel and Tourism Satellite Accounts, 2013, Bureau of Labor Statistics, U.S. Department of Labor, Consumer Expenditure Surveys, 2013, Author's analysis.

These travel expenditures are then allocated to the pre-tax income quintiles in proportion to the category/subcategory per household spending patterns (For example, the lowest quintile of travel spending for other lodging is calculated as

(\$140/\$649)  $\times$  \$623 = \$134.) yielding the following table for 2013 per household total travel spending by income quintile:

Per Household Travel Spending by Consumer Households	All consumer units	Lowest 20 percent	Second 20 percent	Third 20 percent	Fourth 20 percent	Highest 20 percent
Other lodging	\$623	\$134	\$240	\$318	\$623	\$1801
Food away from home/ Alcoholic beverages	\$390	\$166	\$233	\$315	\$467	\$768
Public and other transportation	\$934	\$281	\$435	\$650	\$856	\$2451
Vehicle rental, leases, licenses, and other charges	\$47	\$13	\$25	\$38	\$56	\$104
Maintenance and repairs	\$68	\$27	\$50	\$58	\$85	\$123
Entertainment	\$711	\$288	\$405	\$573	\$822	\$1469
Gasoline, other fuels, and motor oil	\$673	\$317	\$478	\$674	\$849	\$1048
Apparel/Personal care products and services/Reading/Tobacco/Misc	\$709	\$348	\$481	\$604	\$825	\$1286
Total demand less travel by U.S. residents abroad	\$4156	\$1573	\$2349	\$3230	\$4582	\$9050
Travel by U.S. residents abroad	\$573	\$217	\$324	\$445	\$632	\$1247
Total demand	\$4728	\$1790	\$2672	\$3675	\$5214	\$10,298

Sources: Bureau of Economic Analysis, U.S. Department of Commerce, [U.S. Travel and Tourism Satellite Accounts](#), 2013, Bureau of Labor Statistics, U.S. Department of Labor, [Consumer Expenditure Surveys](#), 2013, Author's analysis.

And the following total household spending on travel by income quintile in 2013:

Travel Spending by Consumer Households (in mill \$)	All consumer units	Lowest 20 percent	Second 20 percent	Third 20 percent	Fourth 20 percent	Highest 20 percent
Other lodging	\$78,298	\$3362	\$6052	\$7973	\$15,694	\$45,216
Food away from home/ Alcoholic beverages	\$49,021	\$4169	\$5885	\$7913	\$11,769	\$19,285
Public and other transportation	\$117,404	\$7042	\$10,971	\$16,309	\$21,554	\$61,528
Vehicle rental, leases, licenses, and other charges	\$5920	\$331	\$636	\$951	\$1400	\$2602
Maintenance and repairs	\$8602	\$670	\$1261	\$1444	\$2131	\$3096
Entertainment	\$89,380	\$7229	\$10,226	\$14,364	\$20,688	\$36,874

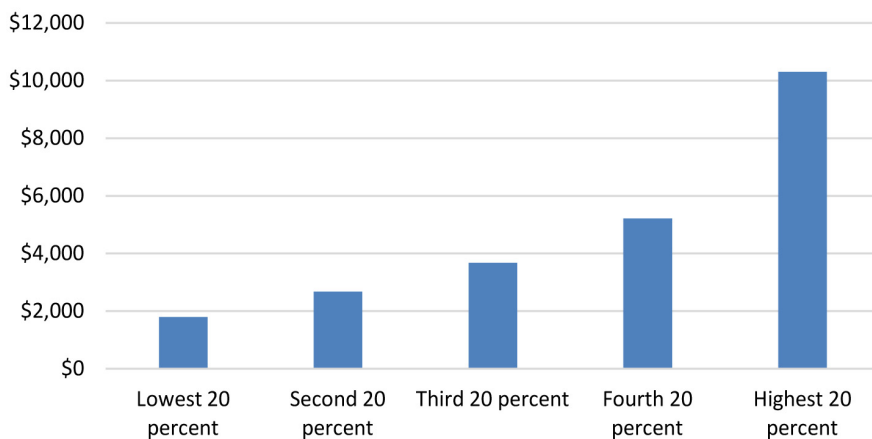
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Gasoline, other fuels, and motor oil	\$84,577	\$7945	\$12,063	\$16,898	\$21,373	\$26,297
Apparel/Personal care products and services/Reading/Tobacco/Misc	\$89,047	\$8722	\$12,133	\$15,151	\$20,764	\$32,277
Total demand less travel by U.S. residents abroad	\$522,249	\$39,471	\$59,228	\$81,003	\$115,373	\$227,175
Travel by U.S. residents abroad	\$71,975	\$5440	\$8163	\$11,164	\$15,901	\$31,308
Total demand	\$594,224	\$44,911	\$67,391	\$92,166	\$131,274	\$258,482

Sources: Bureau of Economic Analysis, U.S. Department of Commerce, U.S. Travel and Tourism Satellite Accounts, 2013, Bureau of Labor Statistics, U.S. Department of Labor, Consumer Expenditure Surveys, 2013, Author’s analysis.

Per household total travel spending in 2013 by quintiles of pre-tax income may be summarized as follows:

2013 Per HH Total Travel vs. Per HH Pre-tax Income Quintiles



Sources: Bureau of Economic Analysis, U.S. Department of Commerce, U.S. Travel and Tourism Satellite Accounts, 2013, Bureau of Labor Statistics, U.S. Department of Labor, Consumer Expenditure Surveys, 2013, Author’s analysis.

Total travel spending by consumer households in 2013 by quintiles of pre-tax income may be summarized as follows:

	2013	2013
	Total Travel	Total Travel
Pre-Tax Household Income	(in Mill \$)	Market Shr
Lowest 20 percent	\$44,911	8%

**Continued**

Second 20 percent	\$67,391	11%
Third 20 percent	\$92,166	16%
Fourth 20 percent	\$131,274	22%
Highest 20 percent	\$258,482	43%
Total	\$594,224	100%

Sources: Bureau of Economic Analysis, U.S. Department of Commerce, U.S. Travel and Tourism Satellite Accounts, 2013, Bureau of Labor Statistics, U.S. Department of Labor, Consumer Expenditure Surveys, 2013, Author's analysis.

This demonstrates a clear income effect on consumer household spending on total travel in 2013.

## **Appendix 2. Methodology: Relationship between per Household Total Travel Spending and per Household Age of Reference Person**

### ***Relationship between per Household Total Travel Spending and Age of Householder during 2013***

In 2013, the following top-line results were determined by age of reference person:

	All consumer units	Under 25 years	25 - 34 years	35 - 44 years	45 - 54 years	55 - 64 years	65 years and older
Number of consumer units (in thousands)	125,670	8275	20,707	21,257	24,501	22,887	28,042
Income before taxes	\$63,784	\$27,914	\$59,002	\$78,385	\$78,879	\$74,182	\$45,157
Income after taxes	\$56,352	\$26,559	\$53,178	\$69,152	\$68,048	\$63,312	\$41,885
Average annual expenditures	\$51,093	\$30,373	\$48,087	\$58,784	\$60,524	\$55,892	\$41,403

Sources: Bureau of Labor Statistics, U.S. Department of Labor, Consumer Expenditure Surveys, 2013.

The categories and subcategories of household spending directly involved in the purchase of travel in 2013 by age of reference person were the following:

	All consumer units	Under 25 years	25 - 34 years	35 - 44 years	45 - 54 years	55 - 64 years	65 years and older
Food away from home	\$2624	\$2096	\$2639	\$3280	\$3206	\$2479	\$1864
Alcoholic beverages	\$444	\$379	\$489	\$443	\$545	\$465	\$326
Other lodging	\$649	\$213	\$271	\$455	\$892	\$1049	\$663
Public and other transportation	\$537	\$249	\$450	\$552	\$657	\$591	\$527
Vehicle rental, leases, licenses, and other charges	\$533	\$229	\$594	\$592	\$605	\$522	\$478
Maintenance and repairs	\$835	\$491	\$681	\$841	\$1071	\$960	\$738
Entertainment	\$2482	\$1243	\$2214	\$2958	\$3070	\$2651	\$2027
Gasoline, other fuels, and motor oil	\$2611	\$1717	\$2676	\$3218	\$3093	\$2792	\$1799
Apparel and services	\$1603	\$1513	\$1832	\$1960	\$1826	\$1563	\$1022
Personal care products and services	\$608	\$342	\$538	\$672	\$723	\$638	\$563
Reading	\$102	\$46	\$60	\$105	\$88	\$132	\$138
Tobacco products and smoking supplies	\$330	\$219	\$309	\$331	\$447	\$438	\$185
Miscellaneous	\$645	\$207	\$577	\$643	\$686	\$841	\$628

Sources: Bureau of Labor Statistics, U.S. Department of Labor, Consumer Expenditure Surveys, 2013.

The travel spending by all consumer households in 2013 were broken down into the following spending components:

	HH Total	Per
Travel by All Consumer Households	(Mill \$)	Household
Traveler accommodations	\$78,298	\$623
Food and beverage services	\$49,021	\$390
Domestic passenger air transportation services	\$67,779	\$539
International passenger air transportation services	\$24,514	\$195
Passenger rail transportation services	\$833	\$7
Passenger water transportation services	\$15,064	\$120
Intercity bus transportation	\$902	\$7
Intercity charter bus transportation	\$1744	\$14
Intracity mass transit	\$2814	\$22
Taxicab and ride sharing service	\$1489	\$12
Scenic and sightseeing transportation services	\$2265	\$18
Automotive vehicle rental	\$5843	\$46

**Continued**

Other vehicle rental	\$77	\$1
Automotive repair services	\$6912	\$55
Parking lots and garages	\$1208	\$10
Highway tolls	\$482	\$4
Travel arrangement and reservation services	\$17,335	\$138
Motion pictures and performing arts	\$12,807	\$102
Spectator sports	\$2890	\$23
Participant sports	\$12,160	\$97
Gambling	\$35,318	\$281
All other recreation and entertainment	\$8870	\$71
Gasoline	\$84,577	\$673
Shopping	\$89,047	\$709
All other commodities	\$0	\$0
Total demand less travel by U.S. residents abroad	\$522,249	\$4156
Travel by U.S. residents abroad	\$71,975	\$573
Total demand	\$594,224	\$4728

These components can be assigned to the consumer household categories and sub-categories as follows:

	HH Total	Per
Travel Spending by All Consumer Households	(Mill \$)	Household
Other lodging	\$78,298	\$623
Food away from home/Alcoholic beverages	\$49,021	\$390
Public and other transportation	\$117,404	\$934
Vehicle rental, leases, licenses, and other charges	\$5920	\$47
Maintenance and repairs	\$8602	\$68
Entertainment	\$89,380	\$711
Gasoline, other fuels, and motor oil	\$84,577	\$673
Apparel/Personal care products and services/Reading/Tobacco/Misc	\$89,047	\$709
Total demand less travel by U.S. residents abroad	\$522,249	\$4156
Travel by U.S. residents abroad	\$71,975	\$573
Total demand	\$594,224	\$4728

Sources: Bureau of Economic Analysis, U.S. Department of Commerce, [U.S. Travel and Tourism Satellite Accounts](#), 2013, Bureau of Labor Statistics, U.S. Department of Labor, [Consumer Expenditure Surveys](#), 2013.

These travel expenditures are then allocated to the age of reference person category in proportion to the category/subcategory per household spending patterns (For example, the under 25 age of reference person of travel spending for other lodging is calculated as  $(\$213/\$649) \times \$78,298$ .) yielding the following table for 2013 total travel spending by age of reference person:

Travel Spending by Consumer Households (in mill \$)	All consumer units	Under 25 years	25 - 34 years	35 - 44 years	45 - 54 years	55 - 64 years	65 years and older
Other lodging	\$78,298	\$1693	\$5391	\$9292	\$20,996	\$23,065	\$17,861
Food away from home/Alcoholic beverages	\$49,021	\$2607	\$8245	\$10,074	\$11,699	\$8577	\$7818
Public and other transportation	\$117,404	\$3583	\$16,204	\$20,405	\$27,992	\$23,522	\$25,699
Vehicle rental, leases, licenses, and other charges	\$5920	\$168	\$1088	\$1113	\$1311	\$1056	\$1185
Maintenance and repairs	\$8602	\$333	\$1156	\$1465	\$2151	\$1801	\$1696
Entertainment	\$89,380	\$2949	\$13,144	\$18,028	\$21,566	\$17,396	\$16,297
Gasoline, other fuels, and motor oil	\$84,577	\$3662	\$14,282	\$17,630	\$19,532	\$16,469	\$13,002
Apparel/Personal care products and services/Reading/Tobacco/Misc	\$89,047	\$4152	\$14,806	\$17,010	\$19,918	\$17,826	\$15,335
Total demand less travel by U.S. residents abroad	\$522,249	\$19,147	\$74,316	\$95,017	\$125,164	\$109,712	\$98,893
Travel by U.S. residents abroad	\$71,975	\$2639	\$10,242	\$13,095	\$17,250	\$15,120	\$13,630
Total demand	\$594,224	\$21,786	\$84,558	\$108,112	\$142,414	\$124,832	\$112,522

And the following per household spending on travel by age of respondent in 2013:

Per Household Travel Spending by Consumer Households	All consumer units	Under 25 years	25 - 34 years	35 - 44 years	45 - 54 years	55 - 64 years	65 years and older
Other lodging	\$623	\$205	\$260	\$437	\$857	\$1008	\$637
Food away from home/Alcoholic beverages	\$390	\$315	\$398	\$474	\$477	\$375	\$279
Public and other transportation	\$934	\$433	\$783	\$960	\$1142	\$1028	\$916
Vehicle rental, leases, licenses, and other charges	\$47	\$20	\$53	\$52	\$53	\$46	\$42
Maintenance and repairs	\$68	\$40	\$56	\$69	\$88	\$79	\$60
Entertainment	\$711	\$356	\$635	\$848	\$880	\$760	\$581
Gasoline, other fuels, and motor oil	\$673	\$443	\$690	\$829	\$797	\$720	\$464
Apparel/Personal care products and services/Reading/Tobacco/Misc	\$709	\$502	\$715	\$800	\$813	\$779	\$547
Total demand less travel by U.S. residents abroad	\$4156	\$2314	\$3589	\$4470	\$5109	\$4794	\$3527
Travel by U.S. residents abroad	\$573	\$319	\$495	\$616	\$704	\$661	\$486
Total demand	\$4728	\$2633	\$4084	\$5086	\$5813	\$5454	\$4013

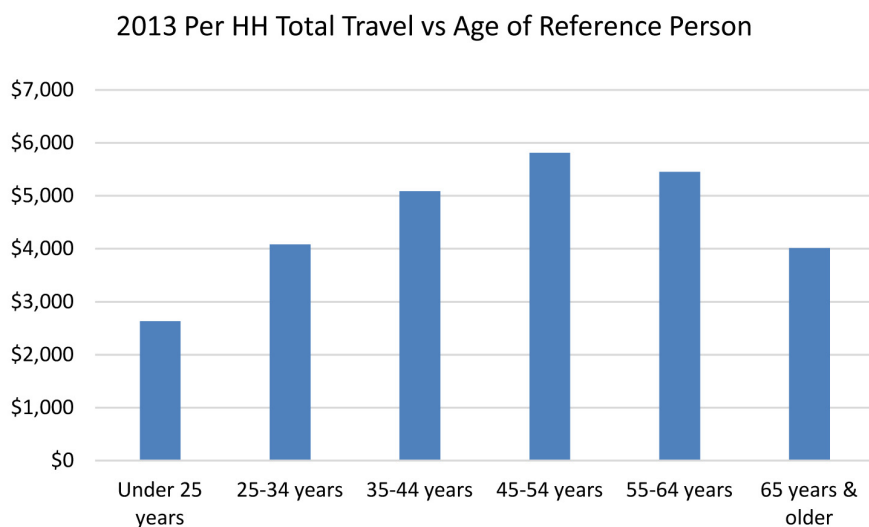
Sources: Bureau of Economic Analysis, U.S. Department of Commerce, U.S. Travel and Tourism Satellite Accounts, 2013, Bureau of Labor Statistics, U.S. Department of Labor, Consumer Expenditure Surveys, 2013, Author's analysis.

Total travel spending by consumer households in 2013 by quintiles of age of reference person may be summarized as follows:

Age of Reference Person	2013
	Total Travel (in Mill \$)
Under 25 years	\$21,786
25 - 34 years	\$84,558
35 - 44 years	\$108,112
45 - 54 years	\$142,414
55 - 64 years	\$124,832
65 years & older	\$112,522

Sources: Bureau of Economic Analysis, U.S. Department of Commerce, [U.S. Travel and Tourism Satellite Accounts](#), 2013, Bureau of Labor Statistics, U.S. Department of Labor, [Consumer Expenditure Surveys](#), 2013.

And per household total travel spending in 2013 by age of reference person may be summarized as follows:



Sources: Bureau of Economic Analysis, U.S. Department of Commerce, [U.S. Travel and Tourism Satellite Accounts](#), 2013, Bureau of Labor Statistics, U.S. Department of Labor, [Consumer Expenditure Surveys](#), 2013.

This demonstrates a clear effect per household spending on total travel in 2013 of the age of the reference person with the peaking of the spending occurring for households whose age of reference person is 45 - 54 years. There is a similar effect in the years 2016, 2018 and 2019.