



**RESOURCE  
SYSTEMS GROUP**  
INCORPORATED



## **Air Travel 2001**

**What do they tell us about  
the future of US air travel?**

**An Industry Report by  
Resource Systems Group, Inc.  
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## INTRODUCTION

The terrorist acts of September 11, the economic recession, the crash of American Flight 587, the global war on terrorism and other events in fall 2001 have together had significant impacts on U.S. domestic air travel. The events have likely expanded the population who are averse to flying and those who continue to fly will expect higher levels of security and will have to pay for it. However, as new airport security measures are put into place and the economy stabilizes, the air travel market will also stabilize around a new baseline condition. It will take several months before these longer-term effects can be estimated, but the new baseline will also be defined by the market and trends that preceded September 11 and which are captured in the survey data collected in this study.

This report details the findings from Resource Systems Group's annual survey of U.S. domestic air passengers, conducted in late spring, 2001. The Internet-based survey of more than 600 air travelers includes in-depth questions about travel patterns, preferences among carriers, aircraft, airports and ticketing options. It also includes sophisticated exercises that explore the trade-offs that travelers make among fare levels and the numerous key components of air service. The core survey questions are included each year, allowing analyses of year-to-year trends. Each year, topical emphases are added and, in 2001, more detailed service and aircraft rating questions were included.

The sections that follow describe the survey sample and then step through their perceptions of the air travel experience – reservations and ticketing, airport and airline choice, basic service elements, and onboard and related amenities.

## THE SURVEY SAMPLE

The survey sample consists of over 600 respondents who had made a paid U.S. domestic air trip within the past 12 months. Invitations to participate were sent to 1,000 individuals who had been recruited nationally through SurveyCafe's ongoing travel-related survey research. The participants were advised that the Internet-based interview would take approximately 30 minutes to complete and they were given their choice of SurveyCafe Just Desserts as an incentive. Based on pre-screening information, the group who chose to participate was not significantly different from those who chose not to participate (including those whose e-mail addresses had lapsed).

The sample was weighted so that it represents the population of U.S. domestic air travelers as described by the U.S. Department of Transportation's most recent *American Travel Survey*. Demographics of the sample are detailed in the Appendix.

## TRIP CHARACTERISTICS

Respondents were asked to describe their most recent qualifying air trip. For about 65%, this was a trip made within the most recent 6 months. About 43% of the trips are for business and the remaining 57% are split among vacation (26%), visiting friends and relatives (27%) and other purposes (4%). The median travel time to the originating airport is about 45 minutes, but 10% reported traveling more than two hours to the airport. The median amount of time spent waiting at the airport before the flight is between 1 and 1½ hours and the median travel time between



originating and destination airports is about 3½ hours. More than 35% of the reported air trips have at least one connection or stop. Over 17% of the itineraries had significant flight delays.

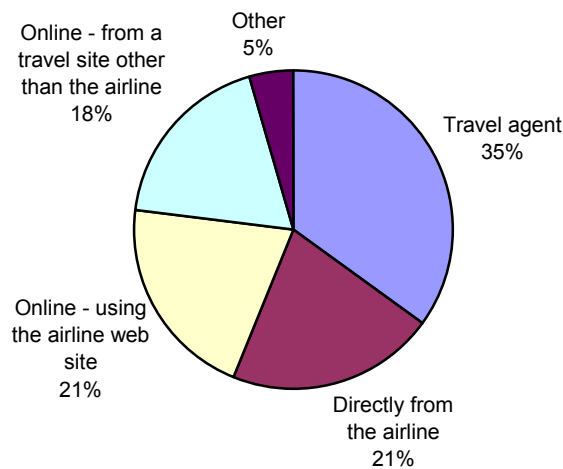
## RESERVATIONS AND TICKETING

There have been dramatic shifts in the ways in which travelers obtain flight information and make reservations. Reductions in travel agent commissions have resulted in agencies charging for many reservations and ticketing services. At the same time, Internet-based services, both airline-based and independent, have improved and expanded to offer many travel services that were previously available only through agents. The survey includes several questions dealing with reservations and ticketing.

### CHOICE OF TICKETING LOCATIONS

Although the survey sample is dominated by those who have Internet access, only 40% reported acquiring their most recent ticket from an online source, as shown in Figure 1. This is an increase from the 33% reported in our 2000 survey. Most of that increase has been on airline's websites and virtually all comes at the expense of travel agent ticketing. Of the tickets purchased through travel agencies, an increased fraction was purchased through national agents without local offices. Among the web-based sites, the share of tickets bought through Travelocity increased and several new services such as Orbitz captured share at the expense of Expedia and Priceline, whose market shares declined.

**Figure 1: Ticket Purchase Location**



The profiles of travelers using each of the ticketing options vary somewhat. Travel agents and “other” locations (predominantly corporate travel offices) are used more often by business travelers who are reimbursed for their travel. However, the most frequent fliers are more likely to use airlines’

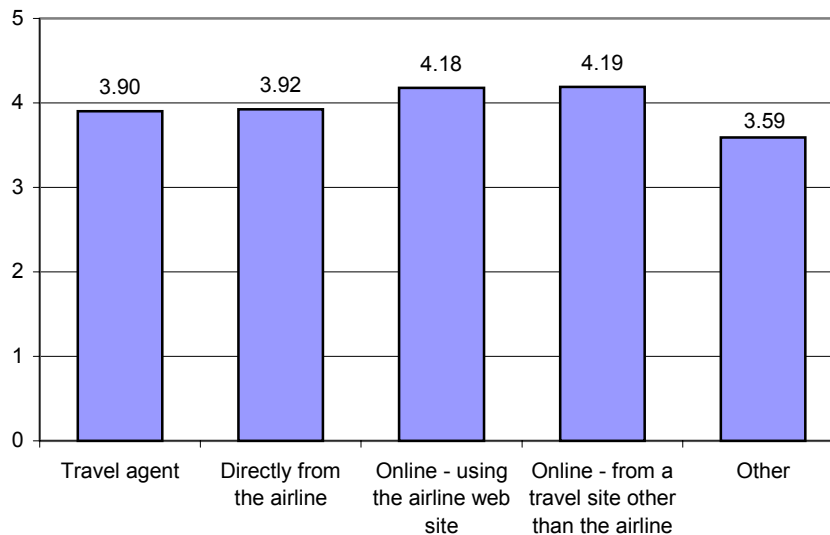


websites for ticketing, presumably benefiting from the frequent flier bonuses that are commonly available at the airline sites. Those who purchase directly from the airlines (over the phone or at ticket counters) are a somewhat more mixed group, including travelers who fly infrequently and those who pay personally for their travel. Airline and independent websites attract a disproportionate fraction of frequent fliers who are at elite levels of one or more programs.

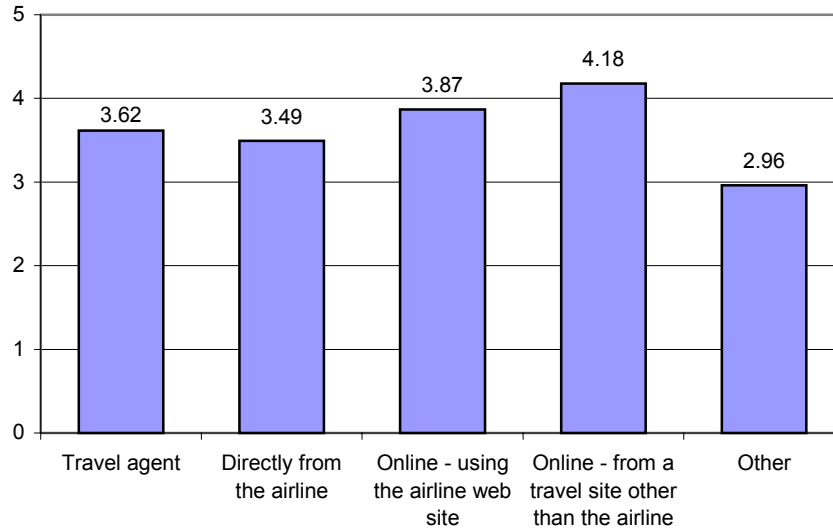
### SATISFACTION WITH TICKETING OPTIONS

Travelers were asked to rate the method that they used to acquire their most recent ticket along five dimensions: how well the flight met needs, whether the price was perceived to be the lowest available, the convenience of the transaction, the quality of customer service and the availability of additional travel-related services. Figure 2 to Figure 6 show the mean ratings for each of these elements along each of these dimensions, on a scale of 1 to 5 where 1 means strongly disagree and 5 means strongly agree with a positively-worded statement.

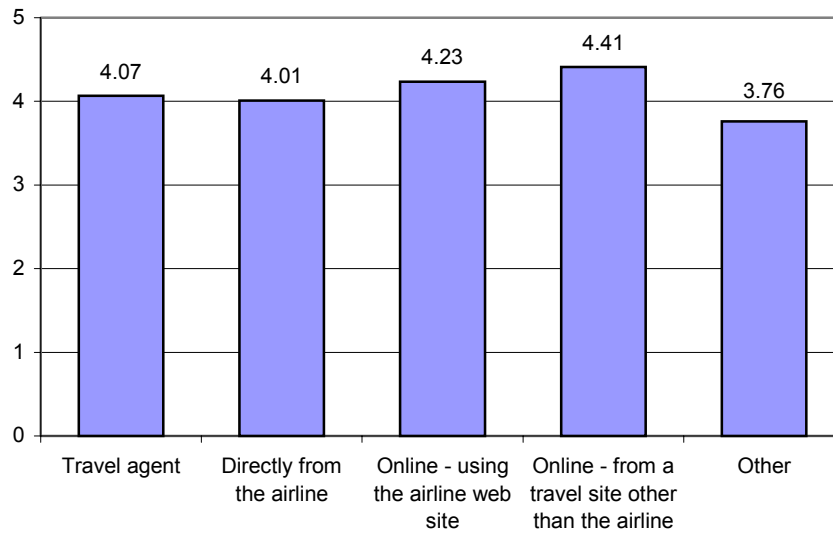
**Figure 2: Rating of Flight Meeting Needs**



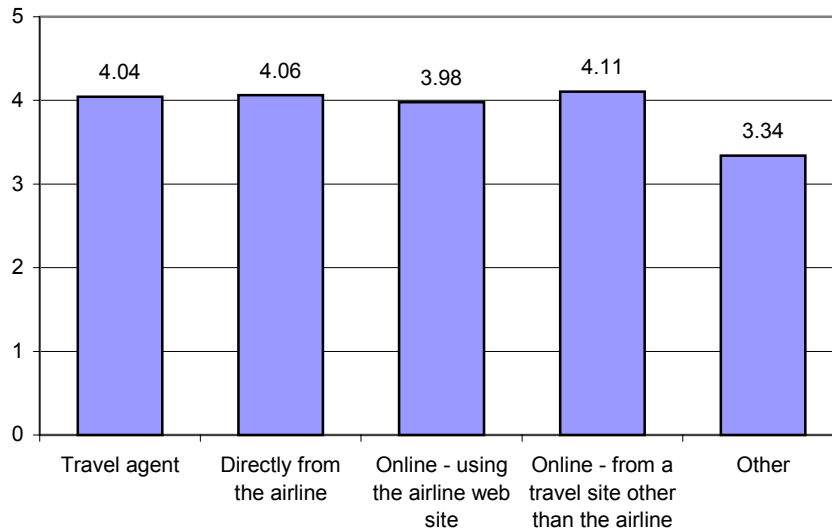
**Figure 3: Rating of Best Available Price**



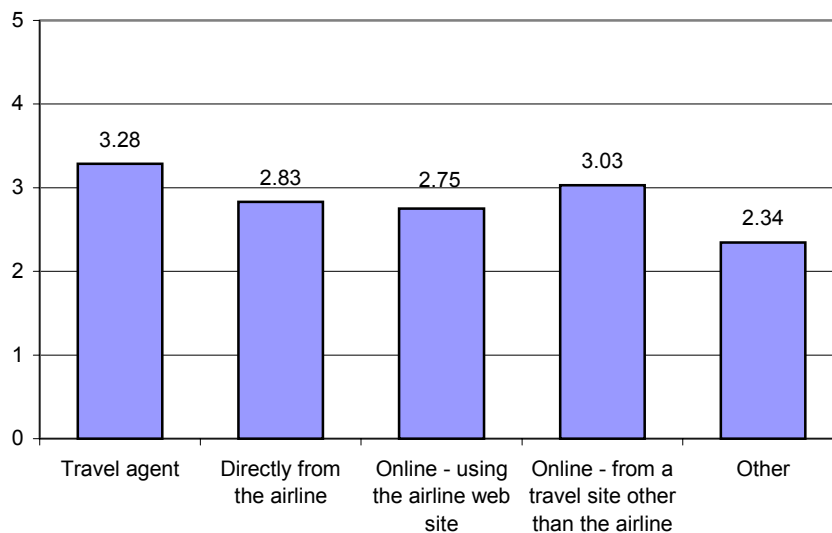
**Figure 4: Rating of Transaction Convenience**



**Figure 5: Rating of Customer Service**



**Figure 6: Rating of Other Services**



The changes in ticketing locations are also reflected in shifts in overall satisfaction ratings; web-based ticketing now has higher ratings than travel agencies in the categories of finding the best overall flight, finding the lowest cost flight, customer service and convenience of the transaction. In previous years, travel agencies outscored web services in these categories. Travel agencies are now rated highest only in providing “other useful travel-related services beyond the ticket purchase”.



While the online ticketing venues appear to score comparably to travel agents, the majority of this web-based survey panel still uses travel agents or non-web (telephone or in person) airline ticketing. This indicates that, to many, there are still perceived advantages to personal contact or problems with online services that have not yet been overcome by the web-based offerings.

## **TICKETING MARKET SEGMENTS**

Travelers were grouped into segments based on levels of satisfaction with their most recently used ticketing method. The analyses, conducted using standard segmentation methods, identified three distinct segments:

- ◆ A “high satisfaction” group that gives relatively high ratings in all categories, with a moderate rating to the “other travel-related services” – This group, comprising 27% the total (down from 40% in 2000), consist of more non-business travelers paying for their own ticket. They are, on average, members of fewer frequent flier programs and include far fewer elite program members.
- ◆ A “moderately satisfied” group that gives somewhat lower ratings in all categories and significantly lower ratings for the “other travel-related services” – This group, consisting of almost 57% of all travelers (up from 45% in 2000), has the lowest travel frequency of the groups but also the highest household income.
- ◆ A “dissatisfied” group that gives across-the-board very low ticketing satisfaction scores – This group, while comprising only 16% of all travelers, includes predominantly high frequency elite member business travelers, traveling on reimbursed tickets.

While the reservations and ticketing systems get generally high ratings on average, there are clearly important areas in which improvement is desired and very important segments of the market for whom the system has significant perceived shortcomings.

## **AIRPORTS**

The survey collects two types of information about airports: rankings of alternative home airports and satisfaction ratings of the home and destination airports most recently used. Respondents were asked to specify the home airport used for their most recent air trip and the survey software then displayed the three closest alternative airports that offer scheduled commercial service. Respondents could then add to or modify this list and were asked to rank the resulting list of airports in order of preference. The resulting rankings represent the relative attractiveness of each airport compared to its regionally proximate “competitors”. Thus, the ranking reflects, in part, the extent to which there are attractive competing airports within each region and, in part, the intrinsic attractiveness of the airport being ranked. Airports with high rankings across respondents could obtain that position either because they are excellent airports or because their regional competitors are poor.





The airports with the highest rankings include Salt Lake City (SLC), St. Louis (STL), Atlanta (ATL) and Minneapolis-St. Paul (MSP) (Figure 7). Major airports with the lowest rankings are Miami (MIA), Tampa (TPA), Charlotte-Douglas (CLT) and New York LaGuardia (LGA) (Figure 8).

**Figure 7: Major Airports with Highest Rating**

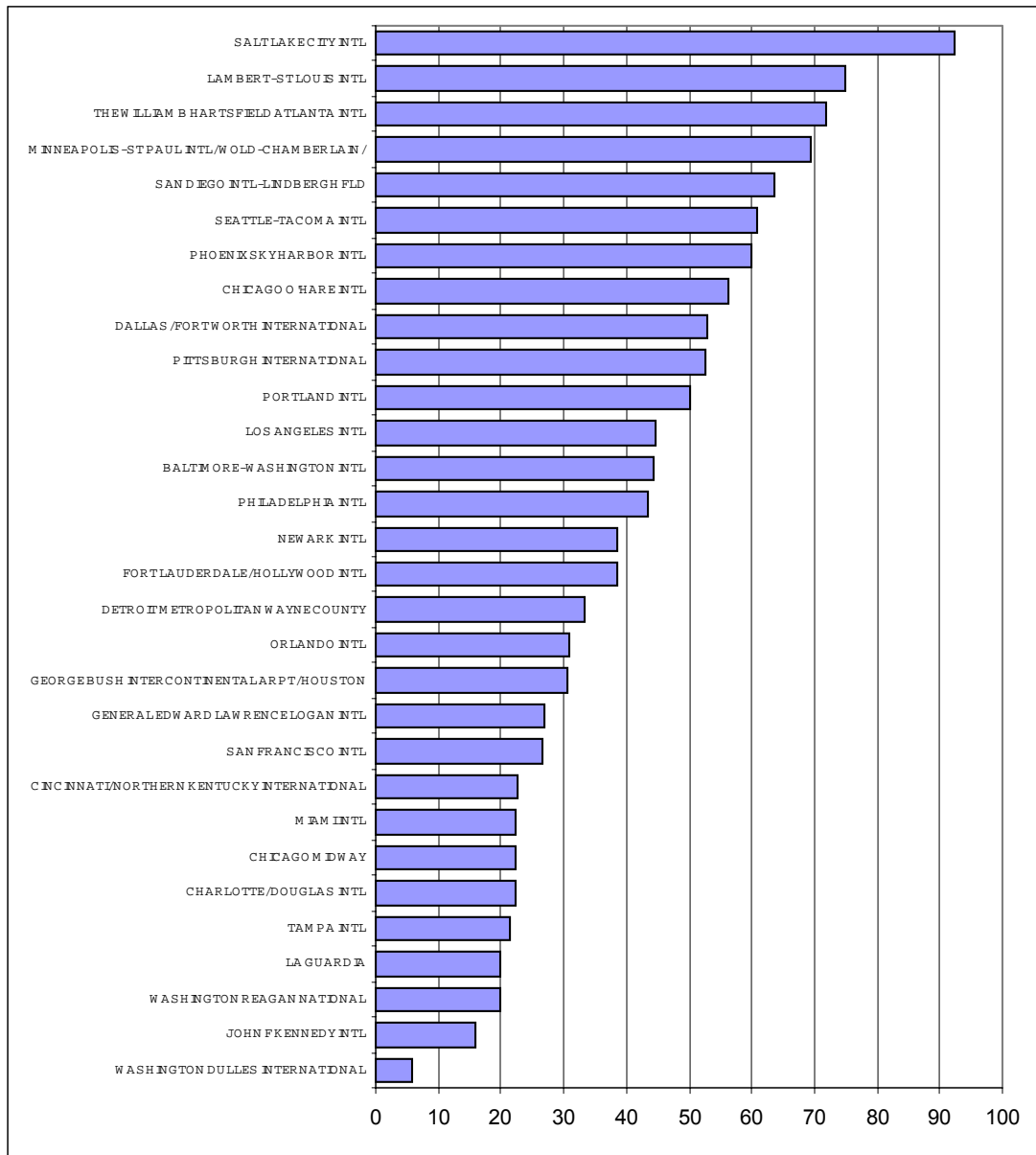
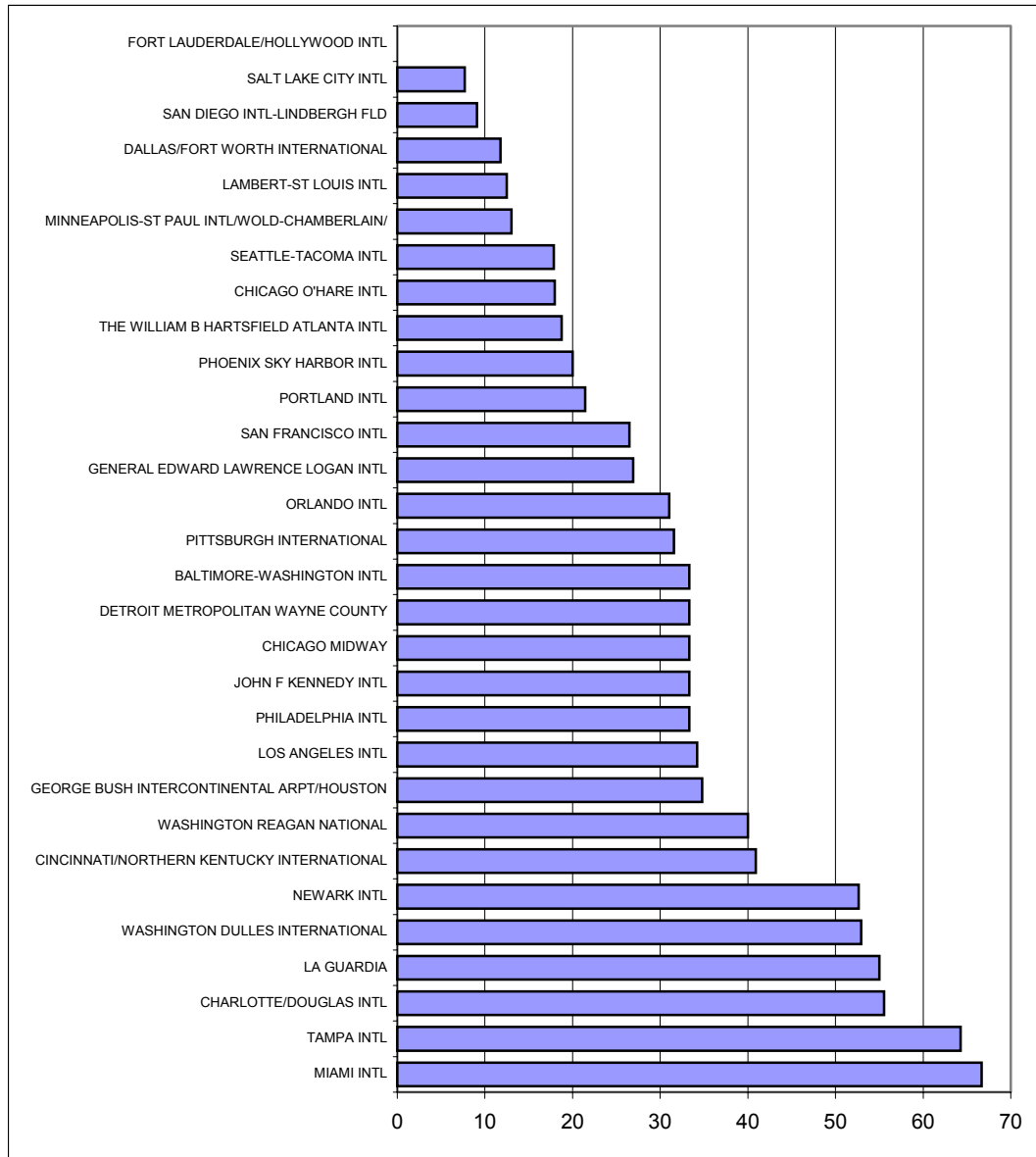


Figure 8: Major Airports with Lowest Rating



Respondents were also asked to rate their satisfaction with the airports used on their most recent air trips. These ratings made relative to a positively-worded statement, were chosen from a scale from 1 (strongly disagree) to 5 (strongly agree). These ratings were collected for both originating (home) and destination airports.



As a home airport, travelers rated Las Vegas McCarran International, Sacramento International, Miami International and Raleigh/Durham the easiest to get to and from, and Boston's Logan International the most difficult to access. Services for resident travelers were rated best at McCarran and Nashville International and worst at JFK International. Table 1 shows the ratings for all the major origin airports in the study.

**Table 1: Ratings of Major Origin Airports**

	The airport at my home end was easy to get to and from	The services provided at my home airport met my needs	Overall, I was very satisfied with the service, convenience and value provided by this flight
	Mean	Mean	Mean
ATL WB Hartsfield Atlanta International	3.98	3.93	3.77
BOS Logan International	2.95	3.28	3.52
BWI Baltimore-Washington International	4.25	3.53	3.55
DCA Reagan National Airport (Washington)	4.16	3.83	2.67
DFW Dallas/Fort Worth International	4.08	3.54	3.64
EWR Newark International	3.37	3.65	3.62
IAD Washington Dulles International	4.00	4.22	4.00
IAH George Bush Intercontinental (Houston)	3.64	3.64	3.60
JFK John F. Kennedy International	3.14	3.06	3.43
LAX Los Angeles International	3.69	3.75	3.96
LGA La Guardia	3.66	3.62	4.01
MCO Orlando International	3.45	3.72	3.34
MIA Miami International	4.69	3.47	3.77
MSP Minneapolis-St. Paul International	3.06	3.07	2.92
ORD Chicago O'Hare International	3.37	3.60	3.54
PDX Portland International	3.43	3.63	3.97
PHL Philadelphia International	3.25	3.27	3.43
PHX Phoenix Sky Harbor International	3.73	3.68	4.09
PIT Pittsburgh International	4.38	3.85	3.75
SAN San Diego International-Lindbergh Field	4.12	3.14	3.14
SEA Seattle-Tacoma International	3.89	3.86	3.47
SFO San Francisco International	3.45	3.54	3.03
SLC Salt Lake City International	3.96	4.20	3.86
STL Lambert-St. Louis International	3.73	3.21	4.07
TPA Tampa International	3.75	4.00	4.17
Group Total	3.63	3.58	3.58



As a destination airport, travelers rated Hartford's Bradley International and Raleigh/Durham the easiest to access and Houston's William P. Hobby the most difficult. Services for non-resident travelers were rated best at Las Vegas McCarran and Denver International and worst at Houston's Hobby Airport. Complete major airport destination ratings follow in Table 2.

**Table 2: Ratings of Major Destination Airports**

	The airport at my destination was easy to get to and from	The services provided at my destination airport met my needs	Overall, I was very satisfied with the service, convenience and value provided by this flight
	Mean	Mean	Mean
ATL WB Hartsfield Atlanta International	3.33	3.58	3.23
BOS Logan International	2.63	3.25	3.53
BWI Baltimore-Washington International	3.62	3.97	3.59
DCA Reagan National Airport (Washington)	3.42	3.42	3.58
DFW Dallas/Fort Worth International	4.13	4.36	4.30
EWR Newark International	2.81	2.91	3.40
IAD Washington Dulles International	2.84	2.84	3.26
IAH George Bush Intercontinental (Houston)	3.00	2.81	2.47
JFK John F. Kennedy International	3.35	3.69	4.05
LAX Los Angeles International	2.87	3.10	2.97
LGA La Guardia	3.78	3.60	3.79
MCO Orlando International	3.76	3.92	3.73
MIA Miami International	3.34	3.41	3.54
MSP Minneapolis-St. Paul International	3.54	3.91	3.60
ORD Chicago O'Hare International	3.62	3.74	3.85
PDX Portland International	4.17	4.60	3.18
PHL Philadelphia International	3.62	3.64	4.00
PHX Phoenix Sky Harbor International	3.28	3.48	3.47
PIT Pittsburgh International	3.60	4.00	3.80
SAN San Diego International-Lindbergh Field	3.61	4.23	4.20
SEA Seattle-Tacoma International	3.93	4.19	4.06
SFO San Francisco International	4.02	3.59	3.17
SLC Salt Lake City International	4.00	4.40	4.60
STL Lambert-St. Louis International	2.78	2.94	2.94
TPA Tampa International	3.84	3.75	3.77
Group Total	3.46	3.63	3.58



## AIRLINE RANKINGS

As with airports, two types of information were collected about airlines: rankings of alternative airlines and satisfaction ratings of the airline that was most recently used. Respondents were asked to list their three most preferred airlines and their least preferred airline, based on their overall preferences, ignoring price. Respondents were also asked to rate their most recent travel experience on the airline used for that trip. The rating factors include the major service elements, overall perceptions, and airport elements. These ratings made relative to a positively-worded statement, were chosen from a scale from 1 (strongly disagree) to 5 (strongly agree).

The figures below show the rankings and ratings for each of the major U.S. domestic carriers. Figure 9 shows the airlines in order from highest percent of respondents giving a top rank to lowest percent giving the top rank.

Midwest Express has, by far, the highest overall rankings, with Delta and Southwest leading the major carriers. It is important to note that the rankings were conducted only among airlines that were listed by respondents as ones for which they had sufficient awareness to perform the preference ordering. Thus, although Midwest Express is highly-ranked among those who know about its service, the level of awareness about Midwest is much lower than for other major carriers.

Figure 10 shows the airlines in order beginning with those having the lowest percent of respondents ranking the airline last. The airlines receiving the highest percentage of last-place rankings include low fare, regional and shuttle airlines.



Figure 9: Percent Giving Highest Ranking

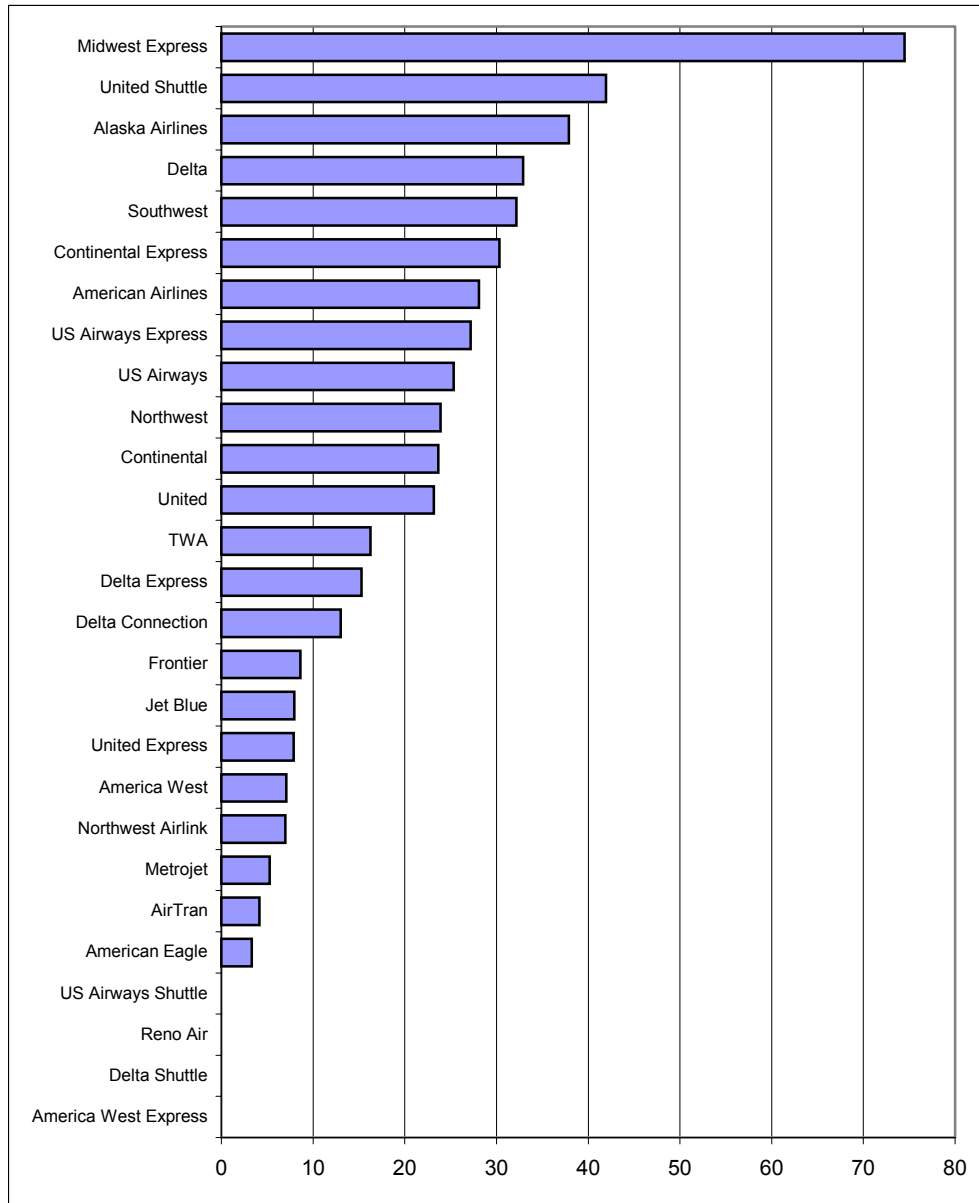


Figure 10: Percent Giving Lowest Ranking

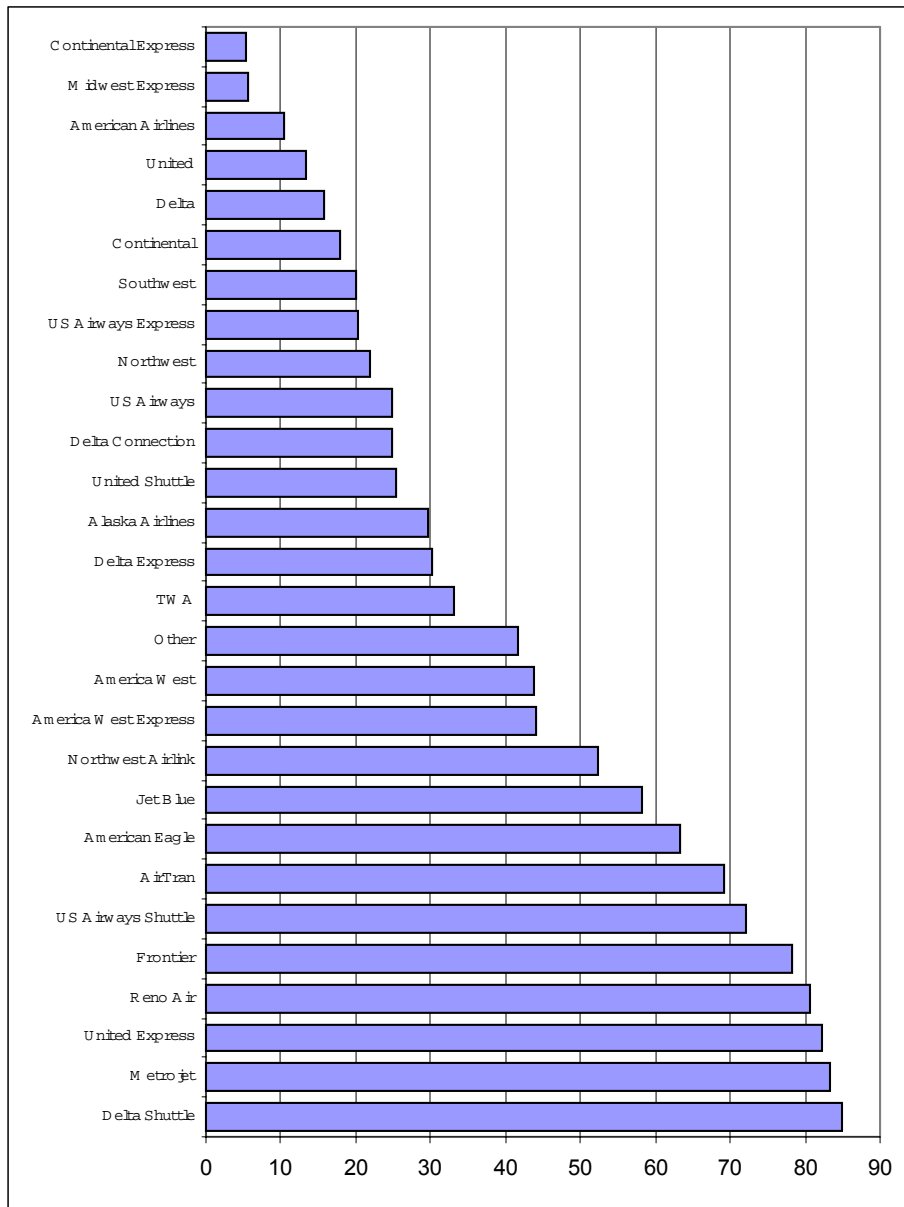


Table 3 shows the average ratings for each of the major airlines, along each of the ratings dimensions. Airport-related ratings are also included, here sorted by airline used for the trip. Although these are also tabulated by airport in the previous section, this tabulation gives information about the mix of airports used by each airline.



**Table 3: Ratings by Airline**

	America West	American Airlines	Continental	Delta	Northwest	Southwest	TWA	United	US Airways	Group Total
The schedule was convenient and met my needs	3.7	4.1	4.1	3.9	3.7	4.3	4.0	3.4	4.0	3.9
The fare was reasonable	4.0	3.3	3.5	3.6	3.3	3.9	4.0	3.2	3.4	3.5
The seating was comfortable	2.7	3.1	3.2	3.4	2.8	3.5	3.3	2.9	3.0	3.1
There was adequate overhead bin space	3.2	3.3	3.3	3.5	3.0	3.6	3.3	3.0	3.3	3.3
In-flight service was good	2.9	3.6	3.7	3.6	3.3	3.8	3.4	3.3	3.6	3.5
In-flight food and beverages were good	2.5	3.1	3.3	3.1	2.8	3.2	2.9	3.1	3.3	3.1
In-flight entertainment was good	2.4	2.5	2.7	2.7	2.4	2.6	2.9	2.8	2.3	2.6
The airport at my home end was easy to get to and from	3.8	4.0	3.6	4.1	3.7	4.0	3.6	3.5	4.1	3.9
The services provided at my home airport met my needs	3.4	3.9	3.8	3.9	3.6	4.0	3.6	3.4	3.9	3.8
The airport at my destination was easy to get to and from	3.4	3.5	3.7	3.7	3.6	3.7	3.7	3.3	3.7	3.6
The services provided at my destination airport met my needs	3.4	3.7	3.8	3.7	3.5	3.8	3.7	3.4	3.7	3.7
Overall, I was very satisfied with the service, convenience and value provided by this flight	3.4	3.8	3.6	3.7	3.4	4.0	4.0	3.2	3.9	3.7

The highest overall ratings go to Southwest and TWA. Both overall ratings are driven in part by the airlines' fare structure. However, Southwest also scores well on all other categories except in-flight food and entertainment.

## BASIC SERVICE ELEMENTS

The values that travelers assign to services were measured by having survey respondents choose among flight alternatives for a trip that they had recently made. Those choices can be used to statistically infer values. Those values, in turn, can be expressed in monetary terms that represent the extra amount that they would be willing to pay for service improvements or, equivalently, the amount that they would expect their fares to be lowered to compensate for reductions in service.

Choice-based conjoint (also known as discrete choice conjoint or stated choice) was used to estimate these values. This method uses carefully designed choice experiments in which the respondent is presented with alternatives to a base condition (in this case, the flight that was actually made) and asked which he or she would most likely choose. For this study, the alternatives were constructed





uniquely for each individual using sophisticated rules to ensure that they were realistic given the flight that that individual made.

The factors that were used to describe the flight alternatives included the following basic service elements:

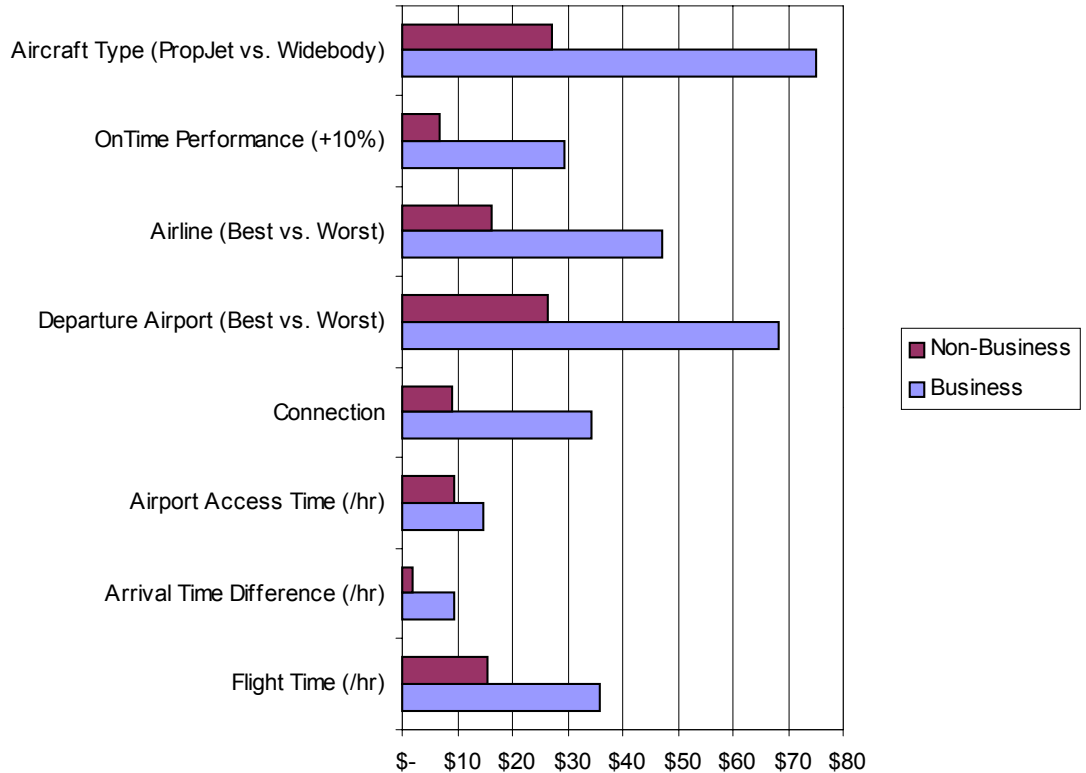
- ◆ Fare
- ◆ Scheduled trip time
- ◆ Number of connections
- ◆ On-time performance
- ◆ Aircraft type
- ◆ Airline
- ◆ Departure airport
- ◆ Arrival time (difference from most preferred time)

The values of these factors used to describe flight alternatives were calculated based on the respondents' reported flight origins/destinations, their rankings of airlines and their preferred departure airports.

The choice-based conjoint data from the survey were used to construct statistical choice models (multinomial logit form). The statistically-estimated coefficients of the models describe the relative importance of each of the factors that were tested. Figure 11 below shows the values of these factors, calculated relative to one-way fares.



Figure 11: Basic Service Values for Air Travelers



There are three very important subtleties that affect the interpretation of this figure. First, the apparent importance, as represented by the lengths of the bars, is affected by the units of measurement. For example, flight time may appear to have a higher value than on-time performance. However, that is only because the chart shows values for a 10% difference in on-time performance vs. values for one hour of flying time. A 20% difference in on-time performance (which certainly exists between some competing itineraries) would have a value equivalent to an hour of flying time for non-business travelers (approximately \$40) and almost double that of an hour of flying time for business travelers. Similarly, the value given for connections is per connection; that value would be doubled for an itinerary with two fewer connections.

The second subtlety is in the ways that values are presented for airports, airlines and aircraft. In each of those cases, respondents were asked to rank their most preferred (1) to their least preferred (4) and the values shown compare the different ranked alternatives. These rankings, of course, vary from individual to individual as described earlier in this report. The values shown here represent the amount an individual is willing to pay to get his or her top-ranked in the category (“best”) vs. the lowest-ranked alternative (“worst”).



The third subtlety that should be recognized is that the values represent averages across all of the travelers. Some travelers weigh specific factors much more heavily and some weigh those same factors much less heavily, as one would expect. For most of the factors, virtually all travelers have the same directional preferences and thus the averages give a fair representation of the strength of preferences across the population. For example, all would prefer lower fares and shorter flight times, all else equal. However, there is a mix of preferences for aircraft types – for example, some prefer widebodies while others prefer standard jets – and these mixed preferences tend to cancel each other across the population so that the average does not completely reflect the strength of preferences at the individual level.

In general it is clear that the basic service elements are relatively highly valued and therefore competing flight itineraries, with different levels of basic service, can support very different fare levels. The sections that follow discuss the findings for each service element.

## **FARE**

The values presented in this report have all been converted to equivalent one-way fare increments so the importance of fare can be interpreted directly against all of these other factor values. Clearly, higher or lower fares can be offset by differences in the other service factors. A flight itinerary that has an additional connection and takes longer has a lower value to the traveler. This lower value can be offset by a lower fare. Sometimes, less convenient itineraries are priced lower but often they are not and the traveler loses significant value by choosing the less convenient itinerary.

## **SCHEDULED TRIP TIME**

The scheduled origin airport to destination airport trip time has a significant value across all travelers. Business travelers are willing to pay \$36 (each way) for each hour of reduction in travel time. Non-business travelers will pay, on average, a little less than half of that (\$15 per hour). While the actual flying times between major destinations do not vary much, there can be large differences in scheduled times because of different itineraries (for example, different airports and/or connections) and different schedule allowances for airport congestion.

## **AIRPORT ACCESS TIME**

The amount of time required get to and from the airport is valued at a lower rate than is the airport-to-airport trip time. This difference may seem anomalous but in fact is consistent with observations from other studies; travelers find time spent on different travel modes to be more or less onerous depending on the conditions on those modes. For the business travelers in this sample, access time is valued at \$15/hour and, for non-business travelers, the value is closer to \$10.

## **NUMBER OF CONNECTIONS**

Connections can have at least three types of effects on the value of an itinerary. First, an additional connection invariably adds travel time which is accounted for in the Scheduled Trip Time. Second,



connections can affect the on-time performance of the itinerary and that effect is also separately measured. The effect that is measured here is the additional inconvenience associated with the connection. This inconvenience includes the disembarking and reboarding required, long walks (or runs) through terminals and having to shut down and restart laptop computers.

Business travelers are especially sensitive to the number of connections in their itinerary; they perceive that each connection represents a \$34 loss in value, beyond the reductions in value from increased travel times and increased chance of missing the scheduled arrival time. Non-business travelers place a somewhat lower, but still significant value of about \$9/connection.

The use of airport hubs allows airlines to provide service to a broader range of city pairs. However, it results in connections being required for a large fraction of the longer trips and a correspondingly reduced value of that service. For business travelers in particular, there are large perceived penalties associated with those extra connections.

### **ON-TIME PERFORMANCE**

The FAA has continued to publish data describing the on-time performance of individual flights. These data are provided to travelers by some reservations services, but certainly not by all. Those who do not provide the data presumably exclude them because they are not inclusive of all flights and they represent past experience which may or may not be an indicator of the experience for a future flight. However, if some of those services also believe that travelers do not care about or do not understand these indicators, the findings from this survey strongly refute that position.

Travelers react very consistently to the on-time performance measure of % on-time. Business travelers place a value of almost \$3 for each 1% change in on-time performance. This means that the perceived difference in value between a flight which is 90% on-time vs. one that is 80% on-time would be about \$30 per one-way trip, per passenger. The value for non-business travelers is closer to \$10 for that same improvement from 80% to 90% on-time.

### **AIRCRAFT TYPE**

For business travelers, the aircraft type has a fairly large value as compared to other basic service elements – \$75 per trip to fly on a jet vs. a propjet. Non-business travelers are willing to pay only one-third of this amount – \$27 – to fly on a widebody jet vs. a propjet. However, the effect is masked somewhat by the fact that some travelers prefer one type while others prefer another type, by the differences that exist within each broad aircraft type (an old MD88 is very different from a new Boeing 757) and by the very important differences in interior amenities among types (the value of which is described in the Amenities section of this report).

Business travelers will pay, on average, \$18 per one-way trip and non-business travelers will pay \$7 to fly in a regional jet vs. a propjet. As with all service elements, there are also likely to be pronounced differences in these values along dimensions other than trip purpose.



## **AIRLINE**

In the choice-based conjoint experiments, survey respondents were shown all of the standard flight details, along with an airline name. The basic service elements (fare, schedule, airport, on-time performance) were all fully-specified, so the airline name was a proxy (as it is in real flight choices) for all of the unspecified service elements such as on-board amenities, frequent flier benefits and perceived safety, for example. The airline values derived from these exercises can be interpreted as the net differences of those elements.

Business travelers indicated that they are willing to pay \$32 more to fly with their most preferred carrier as opposed to their second most preferred airline, again assuming that all other service elements were equal between the flights. They are willing to pay almost 50% more than that amount (\$47) to fly with their most preferred carrier vs. their least preferred. Non-business travelers assign a somewhat lower value, \$8, to their preferred carrier compared to the second-ranked but over \$16 for their most preferred as compared to their least preferred. The actual preferences among the major carriers vary regionally and by customer, but brand equity clearly has a very strong influence on flight choices.

## **DEPARTURE AIRPORT**

Respondents were asked to indicate alternative originating airports that they would consider, and these were included in the flight choices that were presented in the survey. The access time differences among the airports were factored out so that a value could be assigned to the airport itself.

Business travelers indicated that they assign a value of \$53 to their most preferred airport compared to their second-ranked, and over \$68 compared to their third-ranked. The preferences of non-business travelers are not quite so strong; \$10 and \$26 for the most preferred airport compared to second and third-ranked, respectively.

## **ARRIVAL TIME**

Survey participants were asked to indicate their most preferred arrival time and flights were constructed with times varying around that preferred time. The value assigned to the difference, on average, is about \$9/hour for business travelers and only \$2/hour for non-business travelers. These relatively low values appear to result from a mix of travelers who simply want to arrive at any point on a particular day and thus assign a value to the arrival time of close to zero with others who assign high values to a particular arrival time.

## **ON-BOARD AMENITIES**

Over the past few years, several de facto classes of service have evolved beyond the simple first class vs. coach distinction. Low fare airlines have eliminated onboard meals and other amenities that had defined standard coach service. Other airlines such as Midwest Express, and more recently American Airlines with its seat spacing initiative, have structured their service as intermediate between coach



and first class. The survey measured the value that passengers place on each of the major onboard amenities so that the total perceived value associated with alternative service combinations can be estimated. This part of the analysis was supported by an adaptive conjoint component in the survey that tested a set of individual on-board amenities, including:

- ◆ Seat width and spacing
  - Width and spacing as in standard coach
  - Increased spacing
  - Increased width and spacing
- ◆ Seat position
  - Middle
  - Window
  - Aisle
- ◆ Food and beverage service
  - Beverage only
  - Beverage and snack only
  - Beverage and standard airline meal
  - Beverage and superior airline meal
- ◆ Carry-on space
  - One carry-on bag allowed
  - Two carry-on bags allowed, but space is limited
  - Two carry-on bags allowed, there is ample space
- ◆ Onboard entertainment
  - No onboard entertainment
  - Standard headphones/cabin movie
  - Individual movie screen with choice of movies and CD quality sound

In addition, two airline service elements were tested:

- ◆ Reservation system
  - Purchase ticket on-line from a site other than the airline
  - Purchase ticket on-line using the airline's web site
  - Purchase ticket directly from the airline - by telephone or in person

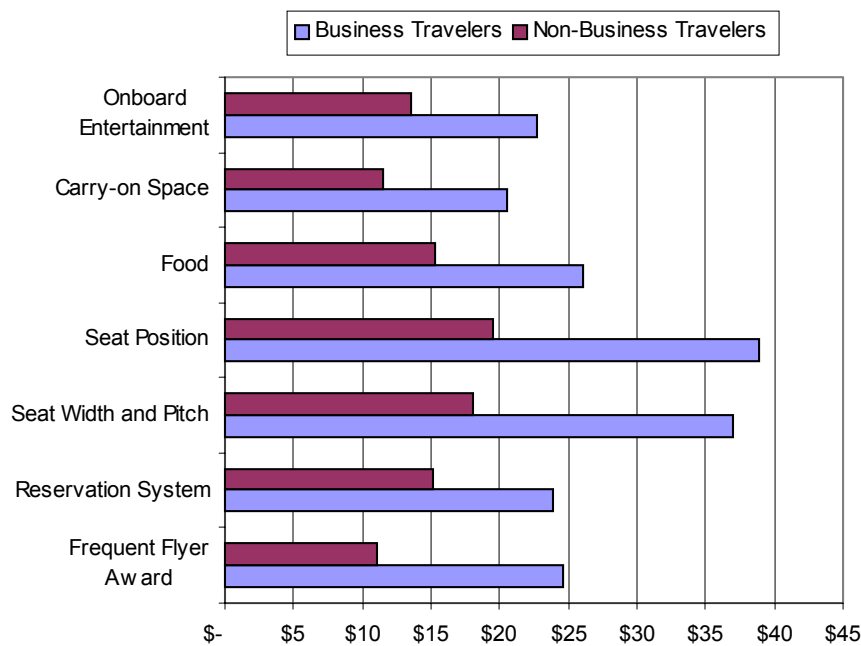


- Purchase ticket through a travel agent
- ◆ Frequent flier accrual
  - Normal frequent flyer miles
  - 500 extra frequent flyer miles (or equivalent)
  - 1000 extra frequent flyer miles (or equivalent)

### TRAVELERS' VALUES FOR SERVICE AMENITIES

The results of these analyses are summarized in Figure 12. As with the earlier choice-based conjoint results, these values should be interpreted with care. They represent overall averages, though here the values all represent the difference in value between the level considered best by each individual and the level considered worst. For some of the attributes such as seat position and reservations system, the "best" level varies across individuals, so the value shown here represents that which would be obtained by giving each traveler his or her most preferred level. All of the estimates are adjusted to represent value per one-way flight segment.

Figure 12: Values for Onboard Amenities and Airline Services



Overall, the highest value amenities for both business and non-business travelers are associated with seating. Seat spacing and width both have high values, as would be expected (for business travelers: \$21 and \$15, respectively for dimensions equivalent to 1<sup>st</sup> class). However, the largest single issue is



seat position; the middle seat is indeed a traveler’s most dreaded place. Business travelers are willing to pay \$30 and non-business travelers will pay about \$15 to avoid it. The other amenities – food and beverage service, carry-on space and onboard entertainment – all have significant, but generally lower, value to travelers. Together, however, these amenities can add significant value to a flight.

The values assigned to the reservation system and frequent flier awards are also significant. The values for the reservation system indicate that there are many travelers who strongly prefer a particular way of obtaining tickets, including continuing to use conventional travel agencies. Bonus frequent flier awards for online ticketing, however, can largely offset these preferences.

The values estimated for each individual feature were applied to typical service classes. The results are summarized in the table below.

**Table 4: Imputed Service Class Values**

	<i>Business Travelers</i>	<i>Non-Business Travelers</i>
True 1st Class	\$117	\$62
Coach with Improved Seat Spacing	\$41	\$24
Standard Coach	\$25	\$15
Low Fare Airline Coach	\$0	\$0

In this table, the low fare airline, without meal service or entertainment, is used as a zero base and the values of amenities associated with higher service classes, as estimated from the adaptive conjoint analysis, are added. Overall, the perceived amenity value difference between standard and low fare coach is modest. However, the value difference is increased by almost 60% with improved seat spacing. And, the premium food and other services provided in first class sections add significant further value. It is important to note that these numbers do not represent the full, perceived value margin between discount airlines and the other major carriers. Brand equity, airport and other service differences can increase this margin significantly.

**SERVICE-RELATED MARKET SEGMENTS**

The values assigned to service amenities were analyzed to determine key needs-based market segments. The analyses, conducted using standard exploratory statistical methods, identified five distinct market segments:

- ◆ **A “price-conscious” group who shop aggressively for the lowest fares and place somewhat lower, but still significant values of the other service attributes** – This group consists of slightly over 40% of all travelers; however, they are also among the least frequent travelers and so represent a somewhat smaller share of all trips. Their trips tend to be for longer-duration non-business stays.
- ◆ **A “frequent flier-conscious” group who place their highest values on frequent flier awards and place moderate to low values on all other amenities** – This is the smallest





of the groups, representing just over 8% of the travelers, but they also have the highest travel frequencies meaning that they represent a disproportionate share of air tickets – They are more likely to be traveling on company-reimbursed tickets, have a household income that is higher-than-average and are more likely to be elite frequent flier members.

- ◆ **A “want it all” group who place relatively high values on all service elements** – These travelers, representing 15% of the total, are similar in many respects to the price-conscious segment except that they are even more likely to be paying for the tickets personally and are more likely to be elite frequent flier members. Since they place high value on all service elements, they are more easily attracted to higher-priced flights with additional amenities.
- ◆ **A “seat comfort” group that is driven by seat width and spacing** – These represent another 19% of the travelers, but they are very frequent fliers so that their proportion of tickets is somewhat higher. They have high elite program membership, are the most likely to choose the first class cabin, and have high household incomes.
- ◆ **A “no middle seat” group who value their seat position over all other service amenities** – These include the remaining 15% of travelers. The travelers in this group make an average number of trips but have relatively high average household incomes and are less likely to be reimbursed for their tickets.

There are many other dimensions along which this type of segmentation can be performed, but this analysis illustrates the diversity that exists within the travel market and demonstrates how differentiation of service can capture important pieces of that market.




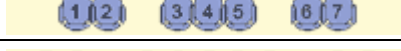
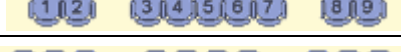

#### AIRCRAFT CHARACTERISTICS

The 2001 survey asked respondents to retrospectively describe the configuration, make, model and occupancy level of the aircraft used on their most recent flight. The data provide an indication of the level of unaided awareness that air travelers have of their aircraft and provide information about differences in satisfaction ratings among aircraft types. Virtually all respondents were able to classify the aircraft into one of the four categories given (propjet, regional jet, standard jet, widebody). Approximately 85% were able to describe their seating configuration (from a list). However, only 40% indicated that they knew the make and model of the aircraft (also from a list). There may be a small latency effect in this recall; 50% those who made trips within the past month were able to recall make and model vs. 60% for those whose trips were more than six months previous to the survey. On the other hand, frequent fliers also have a slightly higher recall rate and those whose trips are most recent are also more likely to be the most frequent fliers.

Table 5 and Table 6 below show the levels of satisfaction with flight elements, tabulated by aircraft type and seating configuration.



**Table 5: Satisfaction with Seating Configuration**

	The seating was comfortable	There was adequate overhead bin space	Overall, I was very satisfied with the service, convenience and value provided by this flight
	Mean	Mean	Mean
	3.4	3.3	3.7
	3.3	3.3	3.8
	3.0	3.4	3.7
	3.2	3.0	3.4
	3.0	3.4	3.5
	2.9	3.3	3.3
Group Total	3.2	3.4	3.7

The most preferred seating configuration for seat comfort is 2-2, followed 2-3 and 2-3-2. This ordering appears to be directly related to the proportion of center seats in each configuration.

**Table 6: Satisfaction with Aircraft Model**

	The seating was comfortable	There was adequate overhead bin space	Overall, I was very satisfied with the service, convenience and value provided by this flight
	Mean	Mean	Mean
Propeller	2.7	2.6	3.2
Regional Jet (50-100 Passenger Capacity)	3.1	3.3	3.7
Standard Jet (100-200 Passenger Capacity)	3.2	3.4	3.7
Widebody (200 plus Passenger Capacity)	3.1	3.1	3.6
Group Total	3.2	3.4	3.7



This table shows a large gap between propeller aircraft and regional jets, but relatively smaller differences among the jet aircraft.

## IMPLICATIONS

The 2001 Aviation and Transportation Security Act will result in a number of changes that should restore some of the confidence in the air travel system that was lost before its passage. The passengers who return to air travel will find that they need to allow additional time for security screening (in some cases, offset by expedited frequent traveler screening programs) and that fares will include an additional \$2.50 per flight segment (\$10.00 maximum per one-way trip). There is no reason to believe that they will value the basic service elements (beyond security) and amenities any differently than they have in the recent past. Those values indicate that there are many ways that the additional costs can be offset.

For example, for the 12 months before September 11, on-time performance had already improved to over 80% on-time performance, from 70% the year earlier. This improvement resulted from lower passenger volumes, less airport congestion and fewer labor-related service disruptions. However, there continues to be a wide range in performance among airlines (Southwest has over 87% on-time vs. Continental's 74%) and airports. The 2001 survey shows that business travelers now place an even higher value on on-time performance than they did in 2000. An additional 2% improvement in on-time performance would increase value by more than enough to offset the security-related fare surcharge.

Throughout the system, there are opportunities to increase the flight value perceived by passengers. Creating additional value both stimulates travel and increases market shares for those flights that provide this value. In ticketing and reservations, web-based services are already perceived as providing additional value in several areas but lacking in others. Differences in airport access and interterminal services create pronounced differences in the value that passengers assign to alternative airports. The basic service elements of flight time, schedule, number of connections and aircraft type all affect value. And, in-flight amenities are part of the implicit equation that passengers use when they impute values for alternative flights.

The values that travelers assign to these service elements have remained reasonably stable through time. This provides a continuing opportunity for airlines, aircraft companies, airport operators and travel reservation services to adapt their products and services in ways that reflect these values. We hope that the information provided in this report will stimulate them to reflect the full set of traveler values in the way those products and services are designed and delivered.

## ABOUT THE STUDY

The survey whose results are described here was designed and independently funded by Resource Systems Group, Inc., a leading national transportation consulting and market research company. The firm has conducted several hundred studies of the markets for major transportation services throughout North American, South America, Europe and Asia. Clients for this work have included



federal agencies, state and regional agencies, transportation service providers and equipment providers.

The survey was conducted by SurveyCafe.com, a market research eVenture of Resource Systems Group. The survey sample was drawn from the SurveyCafe Regulars panel, which has been constructed using national random sampling. The sample was weighted to represent the air travel market as detailed in the most recent U.S. DOT American Travel Survey.

Thomas J. Adler supervised the analyses and prepared the report. Dr. Adler has a PhD from MIT in Transportation Systems. He was a professor at Dartmouth College where he directed the graduate program in transportation for ten years. He has been a consultant with Resource Systems Group for the past 15 years, leading numerous major travel market research projects.

Further information about the study and other related products are provided at [www.surveycafe.com](http://www.surveycafe.com). Comments and information requests can be directed to [airsurvey@rsginc.com](mailto:airsurvey@rsginc.com) or to the author at +1 802 295-4999.



## APPENDIX – SURVEY SCRIPT WITH TABULATIONS

### BACKGROUND QUESTIONS

**When did you make the trip you have in mind?**

	Frequency	Percent
In the past month	144	23.1
1 to 6 months ago	259	41.8
7 to 12 months ago	218	35.1
Total	621	100.0

**What class of service did you use?**

	Frequency	Percent
Economy or coach	542	87.4
Business	58	9.4
First class	20	3.3
Total	621	100.0

*If respondent flew business or first class:*

**Did you receive a free upgrade to this class?**

	Frequency	Percent
Yes	19	24.1
No	60	75.9
Total	79	100.0

**How did you acquire your ticket?**

	Frequency	Percent
Travel agent	218	35.1
Directly from the airline	130	20.9
Online - using the airline web site	130	21.0
Online - from a travel site other than the airline	115	18.5
Other	28	4.5
Total	621	100.0

*If ticket purchased through a travel agent:*

**From what type of travel agent did you acquire your ticket?**

	Frequency	Percent
Local	126	57.8
Local office of national agent	52	23.9
National agent without local office	40	18.2
Total	218	100.0

*If ticket purchased directly from an airline:*

**How did you acquire your ticket from the airline?**

	Frequency	Percent
By telephone	95	73.0
In person	35	27.0
Total	130	100.0

*If ticket purchased on-line using an airline's website:*

**Did you book a flight on the same airline whose web site you used?**

	Frequency	Percent
Yes	128	98.4
No, I booked on another airline, while using a web site host	2	1.6
Total	130	100.0



*If ticket purchased on-line from a travel site not hosted by an airline:*

**What travel site did you use?**

	Frequency	Percent
American Express	4	3.9
AOL	3	2.5
Bestfares	1	.8
CheapTickets	12	10.2
CheapAirlines	1	.5
Expedia	17	15.1
FlyCheap	1	.8
Hotwire	1	1.3
LowestFare	7	6.3
Priceline.com	23	19.6
Travelocity	34	29.5
Other	11	9.5
Total	115	100.0

*If used "other" travel site:*

**What other travel site did you use?**

	Frequency	Percent
airoutlet.com	2	15.4
costa	1	7.7
cruise.com	1	7.7
DHS_Club	1	7.7
egghead.com_vendor	1	7.7
Las_Vegas_Travel_Bureau	1	7.7
Lycos_Travel	1	7.7
my_daughter_in_law_did_it	1	7.7
Trip_manager,_corporate_s	2	15.4
vegas.com	1	7.7
yahoo_travel	1	7.7
Total	13	100.0



*If ticket purchased through a travel agent:*

Ticket purchased through a travel agent.	I found a flight that met my overall needs well.		I found the best price available for this flight.		The transaction was convenient		I received good overall customer service.		I received other useful services in addition to the ticket purchase.	
	Count	%	Count	%	Count	%	Count	%	Count	%
Strongly Disagree	15	7%	22	10%	10	5%	9	4%	26	12%
Disagree	20	10%	18	8%	15	7%	18	8%	33	15%
Neutral	16	7%	44	21%	22	10%	25	12%	65	30%
Agree	85	39%	72	33%	73	33%	70	32%	39	18%
Strongly Agree	81	37%	61	28%	97	45%	96	44%	54	25%
Total	218	100%	218	100%	218	100%	218	100%	252	100%

*If ticket purchased directly from the airline (by telephone or in person):*

Ticket purchased directly from the airline.	I found a flight that met my overall needs well.		I found the best price available for this flight.		The transaction was convenient		I received good overall customer service.		I received other useful services in addition to the ticket purchase.	
	Count	%	Count	%	Count	%	Count	%	Count	%
Strongly Disagree	7	5%	14	11%	5	4%	6	4%	23	18%
Disagree	11	9%	18	14%	11	9%	8	6%	25	20%
Neutral	13	10%	25	20%	14	11%	16	12%	47	36%
Agree	51	40%	37	28%	46	35%	44	34%	20	15%
Strongly Agree	47	36%	36	27%	53	41%	57	44%	14	11%
Total	130	100%	130	100%	130	100%	130	100%	130	100%

*If ticket purchased through an airline's website:*

Ticket purchased through an airline's website.	I found a flight that met my overall needs well.		I found the best price available for this flight.		The transaction was convenient		I received good overall customer service.		I received other useful services in addition to the ticket purchase.	
	Count	%	Count	%	Count	%	Count	%	Count	%
Strongly Disagree	12	9%	14	11%	7	5%	3	3%	22	17%
Disagree	5	4%	5	4%	8	6%	13	10%	23	18%
Neutral	3	2%	23	18%	7	5%	18	14%	63	48%
Agree	39	30%	30	23%	34	26%	45	34%	10	8%
Strongly Agree	72	55%	58	44%	75	58%	51	39%	12	9%
Total	130	100%	130	100%	130	100%	130	100%	130	100%





*If ticket purchased through a travel site not hosted by an airline:*

Ticket purchased through a travel site not hosted by an airline.	I found a flight that met my overall needs well.		I found the best price available for this flight.		The transaction was convenient		I received good overall customer service.		I received other useful services in addition to the ticket purchase.	
	Count	%	Count	%	Count	%	Count	%	Count	%
Strongly Disagree	3	3%	6	6%	4	4%	5	5%	14	13%
Disagree	6	5%	9	7%	4	4%	3	2%	14	12%
Neutral	8	7%	6	6%	3	3%	16	14%	55	48%
Agree	46	40%	31	26%	33	28%	41	36%	17	15%
Strongly Agree	52	45%	63	55%	71	62%	49	43%	14	12%
Total	115	100%	115	100%	115	100%	115	100%	115	100%

**Who paid for the ticket?**

	Frequency	Percent
I paid, personally	384	61.9
My company paid or reimbursed me	207	33.3
Other	30	4.8
Total	621	100.0

**How much did the ticket cost (round trip)?**

	Frequency	Percent
Less than \$100	13	2.1
\$100 to \$199	130	20.9
\$200 to \$299	176	28.3
\$300 to \$499	169	27.3
\$500 to \$749	65	10.4
\$750 to \$999	31	4.9
\$1000 to \$2000	34	5.5
More than \$2000	3	.5
Total	621	100.0

**Between what two cities did you travel for the recent domestic air trip that you have in mind?**

*(Respondent was instructed to enter the city, full airport name, or three-letter airport code. The FAA airport directory was then searched, and if more than one departure or arrival airport was found the respondent was asked to indicate the correct airport(s).)*

The tabulation for this question is not included here but is available upon request.



**What was the primary reason you made this trip?**

	Frequency	Percent
Business	267	43.0
Vacation	162	26.1
Visit friends or relatives	168	27.0
Attend school/college	4	.7
Other	20	3.2
Total	621	100.0

**On what day of the week did you depart?**

	Frequency	Percent
Monday	75	12.1
Tuesday	87	14.0
Wednesday	103	16.7
Thursday	117	18.8
Friday	106	17.0
Saturday	71	11.5
Sunday	62	9.9
Total	621	100.0

**How did you get to your origin airport (select all that apply)?**

	Frequency	Percent
Drove and parked	245	39.4
Was dropped off	271	43.7
Taxi	45	7.2
Shuttle	43	7.0
Bus	6	1.0
Train	10	1.6
Total	621	100.0



**How long did it take you to get to your origin airport?**

	Frequency	Percent
Less than 15 minutes	27	4.3
15 to 29 minutes	152	24.5
30 to 44 minutes	120	19.3
45 to 59 minutes	86	13.9
1 to 1.5 hours	142	23.0
1.5 to 2 hours	33	5.3
2 to 3 hours	38	6.0
More than 3 hours	23	3.7
Total	621	100.0

**How long before your scheduled departure did you arrive at the airport?**

	Frequency	Percent
Less than 15 minutes	6	1.0
15 to 29 minutes	24	3.8
30 to 44 minutes	56	9.0
45 to 59 minutes	61	9.9
1 to 1.5 hours	307	49.5
1.5 to 2 hours	83	13.3
2 to 3 hours	69	11.1
More than 3 hours	15	2.3
Total	621	100.0

**Did you check any baggage for your flight?**

	Frequency	Percent
Yes	425	68.5
No	195	31.5
Total	621	100.0



**What was the scheduled departure time for your flight?**

	Frequency	Percent
4:01 AM through 8:00 AM	217	34.9
8:01 AM through 12:00 PM	197	31.7
12:01 PM through 4:00 PM	108	17.4
4:01 PM through 8:00 PM	79	12.7
8:01 PM through 12:00 AM	21	3.4
Total	621	100.0

**What was the scheduled arrival time for your flight?**

	Frequency	Percent
12:01 AM through 4:00 AM	4	.7
4:01 AM through 8:00 AM	19	3.0
8:01 AM through 12:00 PM	230	37.0
12:01 PM through 4:00 PM	164	26.5
4:01 PM through 8:00 PM	138	22.3
8:01 PM through 12:00 AM	66	10.6
Total	621	100.0

**Was your flight on time?**

	Frequency	Percent
Yes	514	82.8
No	107	17.2
Total	621	100.0

**How late was your flight?**

	Frequency	Percent
15 to 29 minutes	15	14.0
30 to 44 minutes	18	16.8
45 to 59 minutes	13	12.2
1 to 1.5 hours	25	23.4
1.5 to 2 hours	4	3.7
2 to 3 hours	9	8.4
More than 3 hours	23	21.5
Total	107	100.0



**Did you have a direct flight?**

	Frequency	Percent
Yes, direct flight	393	63.3
No, made one or more stops or connections	228	36.7
Total	621	100.0

*If made stops or connections:*

**How many stops did you make?**

	Frequency	Percent
1	74	84.7
2	11	12.7
4 or more	2	2.5
Total	88	100.0

**Number of connections made**

	Frequency	Percent
1	170	94.3
2	10	5.7
Total	181	100.0

**What type of aircraft did you travel on for the primary portion of your trip?**

	Frequency	Percent
Propeller	14	2.3
Regional Jet (50-100 Passenger Capacity)	75	12.1
Standard Jet (100-200 Passenger Capacity)	440	71.0
Widbody (200 plus Passenger Capacity with two aisles in coac)	91	14.6
Total	621	100.0

**How many associates, friends, or family members traveled together in your party?**

	Frequency	Percent
1 (traveled alone)	302	48.7
2 (traveled with one other person)	184	29.7
3 (traveled with 2 others)	44	7.1
4 (traveled with 3 others)	48	7.7
5 (traveled with 4 others)	18	3.0
6 or more (traveled with 5 or more others)	23	3.8
Total	621	100.0



**Which airline did you use?**

	Frequency	Percent
AirTran	13	2.0
America West	24	3.8
America West Express	1	.1
American Airlines	65	10.4
American Eagle	2	.4
Alaska Airlines	16	2.5
Continental	49	7.9
Continental Express	4	.6
Delta	101	16.3
Delta Connection	3	.4
Delta Express	12	1.9
Frontier	2	.4
Jet Blue	2	.3
MetroJet	4	.7
Midway Airlines	5	.8
Midwest Express	1	.2
Northwest	54	8.6
Northwest Airlink	1	.2
Southwest	80	12.9
TWA	18	2.9
United	68	11.0
United Express	4	.6
United Shuttle	4	.7
US Airways	54	8.7
US Airways Express	6	1.0
US Airways Shuttle	3	.5
Other, please specify:	25	4.0
Total	621	100.0



**Airline (other):**

	Frequency	Percent
Aloha Airlines	1	3.7
America Trans Air	2	7.4
Big Sky	1	3.7
British Airways	1	3.7
Charter	2	7.4
Do not remember	6	22.2
Hawaiian	1	3.7
National	1	3.7
Pan AM	1	3.7
Private plane	2	7.4
Spirit	5	18.6
Sun Country	3	11.1
Vanguard	1	3.7
Total	27	100.0

**What was the seating configuration of the (primary if connections) aircraft you traveled on?**

	Frequency	Percent
2 - 2	63	10.2
2 - 3	68	10.9
3 - 2	50	8.0
3 - 3	266	42.9
2 - 3 - 2	40	6.4
2 - 4 - 2	14	2.2
2 - 5 - 2	7	1.2
3 - 4 - 3	12	1.9
Don't Know	101	16.3
Total	621	100.0



**What brand was the (primary if connections) aircraft you traveled on?**

	Frequency	Percent
Airbus	19	3.1
Fokker	6	1.0
McDonnell Douglas	45	7.3
Boeing	176	28.4
Lockheed	4	.6
Don't Know	370	59.6
Total	621	100.0

**What model was the (primary if connections) aircraft you traveled on?**

	Frequency	Percent
A300	1	.1
A310	3	.5
A319/A320/A321	5	.9
DC-29	1	.1
DC-10	12	1.9
F100	3	.4
L1011	6	1.0
MD11	1	.1
MD80	24	3.9
MD90	5	.8
717	3	.5
727	31	5.1
737	66	10.7
747	38	6.1
757	19	3.1
767	11	1.8
777	7	1.1
Don't Know	384	61.9
Total	621	100.0

**How full was your flight?**

	Frequency	Percent
Full (No empty seats noticed)	304	49.0
More than three-quarters, but not completely full	250	40.3
Half to three-quarters full	59	9.5
Less than half full	8	1.3
Total	621	100.0





**How many nights were you away on your trip?**

	Frequency	Percent
0 (left and returned the same day)	22	3.5
1 night	36	5.7
2 nights	95	15.4
3 nights	109	17.6
4 nights	66	10.6
5 nights	61	9.8
6 nights	56	9.0
7 nights	67	10.9
8 to 14 nights	65	10.5
15 to 21 nights	22	3.5
22 nights or more	23	3.6
Total	621	100.0

**How often do you make domestic trips for this purpose?**

	Frequency	Percent
Once per week or more	4	.6
1 - 3 times per month	57	9.2
7 - 11 times per year	67	10.9
1 - 6 times per year	374	60.3
Less than once per year	118	19.0
Total	621	100.0

**The schedule was convenient and met my needs**

	Frequency	Percent
Strongly disagree	38	6.1
Somewhat disagree	57	9.2
Neither agree nor disagree	59	9.5
Somewhat agree	230	37.1
Strongly agree	237	38.2
Total	621	100.0



**The fare was reasonable**

	Frequency	Percent
Strongly disagree	54	8.7
Somewhat disagree	76	12.2
Neither agree nor disagree	116	18.6
Somewhat agree	200	32.3
Strongly agree	175	28.2
Total	621	100.0

**The seating was comfortable**

	Frequency	Percent
Strongly disagree	61	9.8
Somewhat disagree	139	22.4
Neither agree nor disagree	133	21.4
Somewhat agree	201	32.4
Strongly agree	86	13.9
Total	621	100.0

**There was adequate overhead bin space**

	Frequency	Percent
Strongly disagree	58	9.3
Somewhat disagree	107	17.3
Neither agree nor disagree	122	19.7
Somewhat agree	225	36.2
Strongly agree	109	17.6
Total	621	100.0

**In-flight service was good**

	Frequency	Percent
Strongly disagree	46	7.4
Somewhat disagree	68	11.0
Neither agree nor disagree	131	21.0
Somewhat agree	259	41.7
Strongly agree	117	18.8
Total	621	100.0



**In-flight food and beverages were good**

	Frequency	Percent
Strongly disagree	70	11.3
Somewhat disagree	125	20.1
Neither agree nor disagree	158	25.4
Somewhat agree	199	32.0
Strongly agree	70	11.2
Total	621	100.0

**In-flight entertainment was good**

	Frequency	Percent
Strongly disagree	128	20.7
Somewhat disagree	117	18.9
Neither agree nor disagree	271	43.7
Somewhat agree	67	10.8
Strongly agree	37	6.0
Total	621	100.0

**The airport at my home end was easy to get to and from**

	Frequency	Percent
Strongly disagree	36	5.7
Somewhat disagree	66	10.7
Neither agree nor disagree	74	11.9
Somewhat agree	198	31.9
Strongly agree	246	39.7
Total	621	100.0

**The services provided at my home airport met my needs**

	Frequency	Percent
Strongly disagree	24	3.9
Somewhat disagree	64	10.3
Neither agree nor disagree	107	17.3
Somewhat agree	230	37.1
Strongly agree	195	31.4
Total	621	100.0



**The airport at my destination was easy to get to and from**

	Frequency	Percent
Strongly disagree	30	4.9
Somewhat disagree	92	14.8
Neither agree nor disagree	117	18.9
Somewhat agree	236	38.1
Strongly agree	145	23.4
Total	621	100.0

**The services provided at my destination airport met my needs**

	Frequency	Percent
Strongly disagree	26	4.1
Somewhat disagree	75	12.0
Neither agree nor disagree	123	19.9
Somewhat agree	252	40.6
Strongly agree	145	23.4
Total	621	100.0

**Overall, I was very satisfied with the service, convenience and value provided by the flight**

	Frequency	Percent
Strongly disagree	29	4.7
Somewhat disagree	48	7.8
Neither agree nor disagree	129	20.7
Somewhat agree	293	47.3
Strongly agree	121	19.6
Total	621	100.0

**Perceptions of airlines**



	Airline used									Group Total Mean
	America West Mean	American Airlines Mean	Continental Mean	Delta Mean	Northwest Mean	Southwest Mean	TWA Mean	United Mean	US Airways Mean	
The schedule was convenient and met my needs	3.75	4.05	4.05	3.91	3.70	4.31	3.98	3.44	4.02	3.92
The fare was reasonable	3.97	3.32	3.47	3.56	3.32	3.95	3.99	3.21	3.38	3.52
The seating was comfortable	2.67	3.08	3.16	3.35	2.85	3.48	3.28	2.93	2.98	3.14
There was adequate overhead bin space	3.15	3.32	3.33	3.46	3.04	3.62	3.32	2.96	3.27	3.31
In-flight service was good	2.93	3.56	3.70	3.56	3.28	3.77	3.40	3.27	3.64	3.51
In-flight food and beverages were good	2.55	3.06	3.35	3.10	2.83	3.18	2.93	3.10	3.27	3.09
In-flight entertainment was good	2.40	2.50	2.71	2.73	2.42	2.56	2.88	2.83	2.34	2.60
Overall, I was very satisfied with the service, convenience and value provided by this flight	3.35	3.79	3.61	3.70	3.41	3.98	3.98	3.15	3.87	3.65

**Perceptions of airplane seating**



	What was the seating configuration of the (primary if connections) aircraft you traveled on?									Group Total
	2 - 2	2 - 3	3 - 2	3 - 3	2 - 3 - 2	2 - 4 - 2	2 - 5 - 2	3 - 4 - 3	Don't Know	Mean
	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean	Mean	
The seating was comfortable	3.39	3.09	3.54	3.04	3.19	3.47	2.96	2.93	3.32	3.18
There was adequate overhead bin space	3.31	3.08	3.50	3.41	3.00	3.68	3.43	3.31	3.44	3.36
Overall, I was very satisfied with the service, convenience and value provided by this flight	3.66	3.77	3.89	3.69	3.40	4.08	3.53	3.26	3.70	3.69



Please rank the following airlines based on your perception of their quality, ignoring (for now) price.

Airline	Most Preferred		2nd Most Preferred		3rd Most Preferred		Least Preferred	
	Count	%	Count	%	Count	%	Count	%
AirTran	3	0.4%	1	0.2%	15	2.5%	44	7.0%
America West	5	0.7%	23	3.8%	9	1.4%	29	4.6%
America West Express	0	0.0%	1	0.1%	3	0.5%	3	0.5%
American Airlines	82	13.2%	83	13.4%	96	15.5%	31	5.0%
American Eagle	1	0.1%	3	0.5%	5	0.9%	17	2.7%
Alaska Airlines	25	4.0%	8	1.3%	13	2.1%	19	3.1%
Continental	48	7.7%	64	10.3%	53	8.6%	36	5.8%
Continental Express	7	1.1%	7	1.2%	7	1.1%	1	0.2%
Delta	127	20.4%	96	15.4%	102	16.4%	61	9.8%
Delta Connection	2	0.4%	8	1.3%	3	0.5%	4	0.7%
Delta Express	4	0.6%	5	0.8%	9	1.4%	7	1.2%
Delta Shuttle	0	0.0%	1	0.1%	1	0.1%	8	1.3%
Frontier	2	0.3%	3	0.5%	0	0.0%	18	3.0%
Jet Blue	2	0.4%	4	0.7%	6	0.9%	17	2.7%
Metrojet	1	0.2%	1	0.2%	2	0.3%	23	3.7%
Midway Airlines	9	1.5%	6	1.0%	2	0.3%	8	1.3%
Midwest Express	20	3.1%	4	0.6%	1	0.2%	1	0.2%
Northwest	44	7.0%	49	7.9%	50	8.0%	40	6.5%
Northwest Airlink	1	0.1%	2	0.4%	3	0.5%	7	1.0%
Reno Air	0	0.0%	3	0.5%	1	0.1%	14	2.3%
Southwest	76	12.2%	59	9.6%	53	8.5%	47	7.6%
TWA	28	4.5%	41	6.6%	46	7.4%	57	9.1%
United	63	10.2%	87	14.1%	86	13.8%	36	5.9%
United Express	1	0.2%	1	0.2%	0	0.0%	12	2.0%
United Shuttle	8	1.2%	3	0.5%	3	0.5%	5	0.7%
US Airways	45	7.2%	47	7.6%	41	6.6%	44	7.1%
US Airways Express	3	0.5%	5	0.7%	1	0.2%	2	0.4%
US Airways Shuttle	0	0.0%	0	0.0%	3	0.5%	8	1.3%
Other	17	2.7%	3	0.6%	9	1.4%	20	3.3%
Total	621	100.0%	621	100.0%	621	100.0%	621	100.0%



Please rank the following airlines based on your perception of their quality, ignoring (for now) price.  
(Row percentages)

Airline	Most Preferred	2nd Most Preferred	3rd Most Preferred	Least Preferred	Total
AirTran	4.1%	2.3%	24.4%	69.2%	100.0%
America West	7.1%	35.8%	13.3%	43.9%	100.0%
America West Express		13.2%	42.8%	44.0%	100.0%
American Airlines	28.1%	28.5%	32.9%	10.5%	100.0%
American Eagle	3.3%	13.0%	20.3%	63.4%	100.0%
Alaska Airlines	37.9%	12.5%	19.9%	29.7%	100.0%
Continental	23.7%	31.9%	26.5%	18.0%	100.0%
Continental Express	30.3%	34.0%	30.3%	5.4%	100.0%
Delta	32.9%	24.8%	26.4%	15.9%	100.0%
Delta Connection	13.0%	45.1%	17.0%	24.9%	100.0%
Delta Express	15.3%	19.7%	34.7%	30.3%	100.0%
Delta Shuttle		6.0%	8.9%	85.0%	100.0%
Frontier	8.6%	13.2%		78.2%	100.0%
Jet Blue	8.0%	14.0%	19.7%	58.4%	100.0%
Metrojet	5.3%	5.3%	6.3%	83.2%	100.0%
Midway Airlines	37.6%	24.2%	7.0%	31.2%	100.0%
Midwest Express	74.5%	14.4%	5.5%	5.5%	100.0%
Northwest	23.9%	26.8%	27.3%	22.0%	100.0%
Northwest Airlink	7.0%	18.0%	22.7%	52.3%	100.0%
Reno Air		16.0%	3.3%	80.7%	100.0%
Southwest	32.2%	25.3%	22.5%	20.0%	100.0%
TWA	16.2%	23.9%	26.7%	33.1%	100.0%
United	23.2%	32.1%	31.4%	13.4%	100.0%
United Express	7.9%	9.8%		82.4%	100.0%
United Shuttle	41.9%	17.2%	15.6%	25.3%	100.0%
US Airways	25.3%	26.6%	23.2%	24.8%	100.0%
US Airways Express	27.2%	39.9%	12.7%	20.3%	100.0%
US Airways Shuttle			28.0%	72.0%	100.0%
Other	33.8%	7.1%	17.4%	41.6%	100.0%





**What is your membership status in each of these frequent flyer programs?** *(Respondent was instructed to indicate their membership status in the frequent flyer program of each airline they ranked in the previous question).*

Membership status	Most Preferred		2nd Most Preferred		3rd Most Preferred		Least Preferred	
	Count	%	Count	%	Count	%	Count	%
Not A Member	309	49.8%	376	60.6%	419	67.5%	525	84.6%
Standard Level	271	43.7%	222	35.7%	188	30.3%	90	14.6%
Elite-1st (Or Only Level)	31	5.0%	17	2.8%	10	1.7%	4	0.7%
Elite-Highest Level	10	1.6%	5	0.9%	4	0.6%	1	0.1%
Total	621	100.0%	621	100.0%	621	100.0%	621	100.0%

**What commercial airport is closest to your home?** *(Respondent was instructed to enter the city, full airport name, or three-letter airport code. The FAA airport directory was then searched, and if more than one departure or arrival airport was found the respondent was asked to indicate the correct airport(s).)*

The tabulation for this question is not included here but is available upon request.

**Between what two cities did you travel for the recent domestic air trip that you have in mind?**

The tabulation for this question is not included here but is available upon request.

**Which airports would you consider using as an alternative to the airport you used on the day the flight you have described departed?** *(FAA airport directory is searched and respondent is shown a list of airports within a 150-mile radius of the airport closest to the respondent's home. Respondent is asked to rank alternative airports shown in order of preference.)*

The tabulation for this question is not included here but is available upon request.

**How long would it take you to get to your most preferred alternate airport?**

	Frequency	Percent
Less than 30 minutes	31	5.0
30 to 59 minutes	116	18.7
1 to 1.5 hours	196	31.6
1.5 to 2 hours	80	12.9
2 to 3 hours	132	21.2
More than 3 hours	66	10.7
Total	621	100.0



**How long would it take you to get to your second most preferred alternate airport?**

	Frequency	Percent
Less than 30 minutes	19	3.1
30 to 59 minutes	60	9.6
1 to 1.5 hours	159	25.7
1.5 to 2 hours	87	14.0
2 to 3 hours	176	28.4
More than 3 hours	120	19.3
Total	621	100.0

**How long would it take you to get to your third most preferred alternate airport?**

	Frequency	Percent
Less than 30 minutes	54	8.7
30 to 59 minutes	54	8.7
1 to 1.5 hours	115	18.5
1.5 to 2 hours	82	13.2
2 to 3 hours	162	26.1
More than 3 hours	154	24.8
Total	621	100.0

Earlier you said that your scheduled arrival time was \_\_\_\_\_. At what time would you have preferred to arrive, taking into account the purpose for your trip?

**Preferred arrival time**

	Frequency	Percent
12:01 AM through 4:00 AM	2	.3
4:01 AM through 8:00 AM	82	13.2
8:01 AM through 12:00 PM	238	38.4
12:01 PM through 4:00 PM	146	23.4
4:01 PM through 8:00 PM	121	19.5
8:01 PM through 12:00 AM	31	5.0
Total	621	100.0



**Difference in arrival time preference**

	Frequency	Percent
More than 8 hrs later	54	8.7
4 - 8 hrs later	20	3.1
2 - 4 hrs later	19	3.1
Up to 2 hrs later	50	8.0
Same time	129	20.8
Up to 2 hrs earlier	141	22.7
2 - 4 hrs earlier	140	22.5
4 - 8 hrs earlier	41	6.6
More than 8 hours earlier	27	4.4
Total	621	100.0



		The airport at my home end was easy to get to and from	The services provided at my home airport met my needs	Overall, I was very satisfied with the service, convenience and value provided by this flight
		Mean	Mean	Mean
Origin airport	ATL WB Hartsfield Atlanta International	3.98	3.93	3.77
	BDL Bradley International (Hartford)	4.17	4.40	3.89
	BNA Nashville International	4.53	4.73	3.34
	BOS Logan International	2.95	3.28	3.52
	BWI Baltimore-Washington International	4.25	3.53	3.55
	CLE Cleveland-Hopkins International	4.73	4.49	4.33
	DAL Dallas Love Field	3.79	3.79	4.21
	DAY James M. Cox Dayton International	4.32	4.18	4.07
	DCA Reagan National Airport (Washington)	4.16	3.83	2.67
	DEN Denver International	3.50	3.50	4.00
	DFW Dallas/Fort Worth International	4.08	3.54	3.64
	EWL Newark International	3.37	3.65	3.62
	HOU William P. Hobby (Houston)	4.08	3.06	2.98
	IAD Washington Dulles International	4.00	4.22	4.00
	IAH George Bush Intercontinental (Houston)	3.64	3.64	3.60
	JAX Jacksonville International	3.93	3.60	3.60
	JFK John F. Kennedy International	3.14	3.06	3.43
	LAS McCarran International (Las Vegas)	5.00	5.00	4.67
	LAX Los Angeles International	3.69	3.75	3.96
	LGA La Guardia	3.66	3.62	4.01
	MCI Kansas City International	3.36	3.91	3.74
	MCO Orlando International	3.45	3.72	3.34
	MIA Miami International	4.56	4.56	4.12
	MSP Minneapolis-St. Paul International	3.06	3.07	2.92
	MSY New Orleans International-Moisant Field	3.48	3.48	3.14
	OAK Metropolitan Oakland International	3.00	3.00	3.60
	ORD Chicago O'Hare International	3.37	3.60	3.54
	PBI Palm Beach International	3.36	3.36	3.54
	PDX Portland International	3.43	3.63	3.97
	PHL Philadelphia International	3.25	3.27	3.43
	PHX Phoenix Sky Harbor International	3.73	3.68	4.09
	PIT Pittsburgh International	4.38	3.85	3.75
	RDU Raleigh-Durham International	4.61	4.54	4.51
	SAN San Diego International-Lindbergh Field	4.12	3.14	3.14
	SAT San Antonio International	3.50	4.31	4.44
	SEA Seattle-Tacoma International	3.89	3.86	3.47
SFO San Francisco International	3.45	3.54	3.03	
SLC Salt Lake City International	3.96	4.20	3.86	
SMF Sacramento International	4.81	4.57	4.00	
STL Lambert-St. Louis International	3.73	3.21	4.07	
TPA Tampa International	3.75	4.00	4.17	
Group Total		3.72	3.69	3.64



Perceptions of destination airport

		The airport at my destination was easy to get to and from	The services provided at my destination airport met my needs	Overall, I was very satisfied with the service, convenience and value provided by this flight
		Mean	Mean	Mean
Destination airport	ATL WB Hartsfield Atlanta International	3.33	3.58	3.23
	BDL Bradley International (Hartford)	3.11	3.78	3.78
	BNA Nashville International	3.52	4.23	4.42
	BOS Logan International	2.63	3.25	3.53
	BWI Baltimore-Washington International	3.62	3.97	3.59
	CLE Cleveland-Hopkins International	2.00	2.00	2.00
	DAL Dallas Love Field	3.01	2.72	3.06
	DAY James M. Cox Dayton International	4.00	3.67	4.33
	DCA Reagan National Airport (Washington)	3.42	3.42	3.58
	DEN Denver International	3.51	3.76	3.78
	DFW Dallas/Fort Worth International	4.13	4.36	4.30
	EWB Newark International	2.81	2.91	3.40
	HOU William P. Hobby (Houston)	2.86	2.86	3.71
	IAD Washington Dulles International	2.84	2.84	3.26
	IAH George Bush Intercontinental (Houston)	3.00	2.81	2.47
	JAX Jacksonville International	3.00	3.69	4.15
	JFK John F. Kennedy International	3.35	3.69	4.05
	LAS McCarran International (Las Vegas)	3.88	3.99	3.89
	LAX Los Angeles International	2.87	3.10	2.97
	LGA La Guardia	3.78	3.60	3.79
	MCI Kansas City International	3.51	3.64	3.43
	MCO Orlando International	3.76	3.92	3.73
	MIA Miami International	3.34	3.41	3.54
	MSP Minneapolis-St. Paul International	3.40	3.41	3.44
	MSY New Orleans International-Moisant Field	3.13	3.29	3.52
	OAK Metropolitan Oakland International	4.14	3.44	4.26
	ORD Chicago O'Hare International	3.62	3.74	3.85
	PBI Palm Beach International	4.10	3.71	3.43
	PDX Portland International	4.17	4.60	3.18
	PHL Philadelphia International	3.62	3.64	4.00
	PHX Phoenix Sky Harbor International	3.28	3.48	3.47
	PIT Pittsburgh International	3.60	4.00	3.80
	RDU Raleigh-Durham International	3.43	3.62	4.00
	SAN San Diego International-Lindbergh Field	3.61	4.23	4.20
SAT San Antonio International	3.55	3.81	3.97	
SEA Seattle-Tacoma International	3.93	4.19	4.06	
SFO San Francisco International	4.02	3.59	3.17	
SLC Salt Lake City International	4.00	4.40	4.60	
SMF Sacramento International	4.25	4.05	4.05	
STL Lambert-St. Louis International	2.78	2.94	2.94	
TPA Tampa International	3.84	3.75	3.77	
Group Total		3.51	3.65	3.66



Over the past year, what percentage of the time did you purchase tickets through the following methods:

	Travel agent		Direct from airline		Online using an airline or other travel web site		Other	
	Count	%	Count	%	Count	%	Count	%
Never	183	34.2%	160	33.1%	130	25.6%	279	76.0%
Less than 25% of time	93	17.3%	98	20.3%	75	14.7%	48	13.1%
25 to 49% of time	44	8.2%	52	10.7%	48	9.4%	11	2.9%
50 to 74% of time	67	12.5%	77	15.8%	92	18.1%	14	3.8%
75 to 99% of time	53	10.0%	35	7.3%	60	11.9%	5	1.2%
Always	95	17.8%	62	12.9%	103	20.3%	11	3.0%
Total	536	100.0%	485	100.0%	507	100.0%	367	100.0%

Type of travel agent do you usually use?

	Frequency	Percent
Local	205	58.1
Local office of national agent	88	24.9
National agent without local office	60	17.0
Total	353	100.0

Over the past year, when purchasing tickets directly from the airline, what percentage of the time did you contact the airline by the following methods:

	Telephone		In person	
	Count	%	Count	%
Less than 25% of time	9	2.8%	57	40.3%
25 to 49% of time	13	4.0%	20	14.1%
50 to 74% of time	40	13.0%	38	26.7%
75 to 99% of time	67	21.6%	13	9.3%
Always	181	58.5%	14	9.6%
Total	309	100.0%	141	100.0%



**Over the past year, what percentage of the time did you purchase tickets online?**

	Frequency	Percent
Less than 25% of time	75	19.8
25 to 49% of time	48	12.6
50 to 74% of time	92	24.4
75 to 99% of time	60	16.0
Always	103	27.2
Total	377	100.0

**Over the past year, of the tickets you purchased on-line, what percentage of the time did you use the following sites?**

	N	Minimum	Maximum	Mean
American Express	69	0	100	18.14
AOL	68	0	100	14.68
Atevo	51	0	25	0.71
Bestfares	69	0	100	9.20
Biztravel	57	0	25	2.13
Cheapairlines	57	0	50	3.61
Cheaptickets	113	0	100	18.37
Expedia	125	0	100	32.51
Flycheap	55	0	75	3.36
Hotwire	61	0	100	5.73
Lowestfare	75	0	100	15.61
Orbitz	52	0	100	4.70
Priceline	114	0	100	30.18
Sidestep	51	0	50	1.58
Travelnow	48	0	25	0.75
Travelocity	176	0	100	40.41
Travelscape	54	0	50	5.50
Trip.com	50	0	50	3.31
Tripreservations	45	0	75	1.94
Other travel site	21	0	100	40.49



**DEMOGRAPHICS**

**Number of vehicles in household**

	Frequency	Percent
0	13	2.2
1	159	25.6
2	292	47.1
3 or more	156	25.1
Total	621	100.0

**What is your gender?**

	Frequency	Percent
Female	295	47.8
Male	321	52.2
Total	616	100.0
Refused	4	

**Employment status**

	Frequency	Percent
Full-time worker	383	62.1
Part-time worker	35	5.7
Self-employed	59	9.6
Student	38	6.2
Retired	36	5.9
Homemaker	53	8.6
Unemployed	12	1.9
Total	616	100.0
Refused	4	





*If employed:*

**Employment position**

	Frequency	Percent
Clerical/secretarial	35	7.4
Executive/managerial	124	26.0
Professional/technical	194	40.6
Sales/buyer	35	7.3
Teacher/professor	20	4.3
Retail/service	33	6.9
Other non-office worker	36	7.6
Total	477	100.0

*If employed:*

**Type of industry**

	Frequency	Percent
Communications	32	6.8
Construction	20	4.2
Education	34	7.2
Finance/insurance	36	7.6
Government	37	7.7
Health/medical	60	12.5
Manufacturing	37	7.7
Marketing/market research	8	1.6
Retail trade	27	5.7
Airline	1	.3
Transportation	11	2.3
Wholesale trade	6	1.3
Professional services	78	16.3
Other	89	18.7
Total	477	100.0



**Annual household income**

	Frequency	Percent
Under \$10,000	12	1.9
\$10,000 to \$19,999	29	4.7
\$20,000 to \$29,999	52	8.5
\$30,000 to \$39,999	78	12.6
\$40,000 to \$49,999	66	10.7
\$50,000 to \$74,999	162	26.3
\$75,000 to \$99,999	99	16.0
\$100,000 or more	119	19.3
Total	616	100.0
Refused	4	

