



Reliability as a factor in small community air passenger choice



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ABSTRACT

Small community airports are at a constant struggle to retain commercial air service. This study supports previous research that airfare cost and travel time are important in air travel choice, but it also concluded that reliability of service is a factor for small community residents. These results were supported by anecdotal data from published sources, as well as both quantitative and qualitative responses from an extensive community survey. It is argued that perceived reliability be considered as an important factor in future research and small commercial airport operations.

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1. Introduction

Small community airports are at a constant struggle to retain commercial air service. This study supports previous research that airfare cost and travel time are important in air travel choice, but it also concluded that reliability of service is a factor for small community residents. These results were supported by anecdotal data from published sources, as well as both quantitative and qualitative responses from an extensive community survey. It is argued that reliability be considered as an important factor in future research and small commercial airport operations.

In recent years, the United States airline industry has been practicing “capacity discipline,” a term given to a reduction in flights which has also resulted in higher load factors and airline profits. These capacity reductions have impacted smaller airports more than large hubs (Wittman and Swelbar, 2013), and many American cities have lost service altogether. Coupled with this decrease in supply of flights is the challenge that small communities face in attracting and retaining passengers (“demand”). Leakage of passengers from small communities to hub airports is especially important for non-hub airports, which are often at a disadvantage in airfares, number of flights and airline choice.

There are several decades of research on airline and airport choice, much of it focusing on multi-airport regions or passenger leakage (e.g. Harvey, 1987; Hess et al., 2007; Phillips et al., 2005; Suzuki et al., 2004; Zhang and Xie, 2005). In his review of

previous studies, Parrella (2013) listed several main factors affecting leakage: airfares, flight frequency, accessibility (time and cost), nonstop flights, frequent flyer programs, aircraft type, and airport service quality. However, news data indicate that reliability due to flight interruptions (e.g. delays and cancellations) may also be a factor, especially when local residents perceive that reliability is poor.

Community leaders have stated that a large number of delays and cancellations were a large reason for low passenger totals in Modesto (Valine, 2014) and Chico (Editorial, 2014), two California cities which lost all commercial air service in 2014. A report commissioned by Chattanooga (Tennessee), found that leakage was driven by two primary factors: low fares and more reliable service (“Report,” 2003), and complaints about airline reliability later resulted in the founding of a citizens group (Morrison, 2014). Poor reliability due to flight interruptions at Champaign–Urbana (Illinois) were said to “[make] it difficult to predict whether fliers will make their connections in Chicago” (Liu and Holly, 2013), while a Dubuque (Iowa) newspaper cited “consistent and reliable air travel” as a priority for employers (Jacobson, 2014). A Redding (California) resident expressed concerns that arriving on-time was a “game of chance” (“Daily Jet,” 2015). Factors such as weather and congestion at certain hub airports likely make reliability more of a factor at some small airports more than others. Yet, evidence indicates that poor reliability affects multiple geographic areas and connecting airports.

Reliability can be measured objectively with factors like on-time arrival, delays and cancellations, complaints, and mishandled

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luggage (“America’s most reliable,” 2008). However, individuals’ perceived reliability may be different than objective measures, which may be due in part to the availability heuristic. This heuristic states people estimate the frequency or probability of an event (in this case, a delay or cancellation) by the “ease with which instances or associations could be brought to mind” (Tversky and Kahneman, 1973, p. 208). For example, if a passenger has faced two cancelled flights (or heard about cancelled flights) from the same airport, she may perceive air service to be unreliable, even if those were the only two flights cancelled in a month. Although it is difficult to define perceived reliability, and it likely differs among individuals, it appears to have a major impact on fliers’ impressions of an airport’s service. References to reliability at small community airports have focused on delays and cancellations, not service complaints or mishandled luggage. Thus, reliability is defined as passengers’ perceptions of flight delays and cancellations.

Reliability is especially important at small airports. Because there are fewer flights, a delay or cancellation often leads to even longer arrival delays (Stone, 2016). Poor reliability has been linked to passengers choosing an alternate (usually hub) airport for future flights, and a small number of “leaking” passengers account for a greater percentage of travelers than at a larger airport.

Despite this evidence, few researchers have included reliability as a factor in leakage. Ballard (2008) used a regression model to study leakage at two Wyoming airports. Cancellation percentage was found to significantly increase leakage. However, a higher percentage of delayed flights actually led to increased passenger totals at two separate airports, which seems to be counterintuitive. As part of a larger travel survey, the current research directly asked travelers questions about reliability and airport choice.

2. Method

A study was administered in November/December 2014 by a chamber of commerce in a Western U.S. city (population 80,000–90,000; county population 200,000–250,000) to determine local attitudes and behaviors about air travel. Questions were divided into a several general categories: past flight purchase behavior, air travel choice behavior, attitudes toward the local airport and nearest hub airport, anticipated future behavior, and ground transportation. Regarding air travel choice, individuals were asked to rate the importance of ten factors (nine from previous research, plus reliability of service) on a 5-point Likert type scale. Following Zhang and Xie (2005), respondents were also asked to rank the factors in level of importance.

The survey was conducted online and publicized through the chamber of commerce, local media (including print, online, and television), and major local employers including a university and college. 2244 individuals opened the survey, and 1582 completed the survey for a completion rate (not response rate) of 70.5%. The survey included both residents as well as individuals who traveled into the area frequently. Because this paper considers local attitudes, only individuals with a ZIP code in the local area were included, for a sample size of 1301.

It was not determined if the sample was representative of the population. However, the researchers believed a large sample of air travelers was preferred to a more representative sample of the population which includes many non-fliers. A sample of airport passengers was not deemed to be cost-effective, as the airport’s few passengers were spread across several flights during the day. Air travelers are typically more affluent than the population. In line with this, the respondents’ median household income range (\$75–99,999) was higher than the median county (\$43,752) and

Table 1
Mean importance when selecting flights.

	Mean importance	S.D.
Cost of airfare	4.44	0.90
Reliability of service	4.36	0.88
Travel time to the airport	4.07	0.96
Preferred flight times	4.04	0.90
Total travel time	3.99	0.92
Non-stop service to destination	3.86	1.05
Checked bag fees	3.76	1.16
Airline preference	3.21	1.18
Frequent flier program	2.94	1.39
Jet service (not turboprops)	2.63	1.23

1 = not at all important; 5 = very important.

city (\$43,372) income. About three-fourths (77.7%) had lived in the area for more than 10 years. Fifty percent of respondents had purchased tickets for business in the last year, and 90.7% had purchased leisure tickets. The median airfare expenditure in the past year was \$2000.

3. Results

Respondents rated the importance of ten factors on a 5-point Likert-type scale (see Table 1). Five of the factors were above 3.99 in importance: cost (4.44), reliability (4.36), time to airport (4.07), flight times (4.04), and total travel time (3.99). These results are in line with past research, such as Zhang and Xie’s (2005) finding that ticket price is most important and Lian and Rønnevik’s (2011) conclusion that distance/travel time is important. However, in this study, reliability was listed as very important to travelers—even moreso than flight attributes and travel time.

While these results suggest that reliability is important, ranking the mean importance only tells part of the story. When purchasing airline tickets, it is likely that an individual will need to make tradeoffs. For example, it may not be possible for a passenger to get the best cost, the best flight times, and the shortest trip to the airport in the same ticket.

In order to force individuals to choose between desirable attributes, three additional questions were asked in order to find out which factor was first, second, and third most important (See Table 2). When measuring mean level of importance, both cost (4.44) and reliability (4.36) were similar. However, when asked to rate the factors, cost was most important to 52.5% of respondents. Reliability was listed most important to 16.2%. This indicates that cost is likely the primary predictor of choice, but that many small community travelers focus on reliability most in air travel decisions. One in six (16.2%) rated reliability as most important (second to airfare cost); and 40.5% rated reliability as one of the three most important factors (third to airfare cost and preferred flight times). Other than reliability, these findings are similar to Zhang and Xie’s (2005) findings that ticket price, distance to airport, and time of flights were most frequently in the top three importance factors (although they only included six attributes).

Using two different measurements, respondents in this study indicated that reliability is one of the three most important factors when selecting flights. As it could not be assumed that travelers visit the government website to determine flight reliability, it is likely that individuals rely on “perceived reliability.”

A final indicator of the importance of reliability to consumers was determined with an open ended question. The final question on the survey was intentionally left open to capture a wide variety of responses (“Any additional comments? Please enter them

Table 2
Most important factors in air travel choice.

	% Ranking this factor as one of 3 most important	% Ranking this factor as most important	% Ranking this factor as 2nd most important	% Ranking this factor as 3rd most important
Cost of airfare	88.1%	52.5%	23.4%	12.2%
Preferred flight times	44.2%	6.6%	19.4%	18.2%
Reliability of service	40.5%	16.2%	12.2%	12.1%
Total travel time	39.7%	6.9%	14.5%	18.4%
Non-stop service to destination	30.9%	6.0%	11.8%	13.1%
Travel time to the airport	29.8%	8.2%	11.1%	10.5%
Airline preference	8.6%	1.5%	2.3%	4.8%
Checked bag fees	8.5%	0.2%	2.2%	6.1%
Frequent flier program	8.0%	1.3%	2.8%	3.9%
Jet service (not turboprops)	1.6%	0.5%	0.4%	0.8%

here.”). Of the 1301 local respondents, 655 left responses. Without prompting, more than twenty percent ($n = 136$) mentioned delays, cancellations, reliability, weather delays, and/or missed connections in their comments on local air travel. As a comparison, ninety-nine mentioned cost of flights in their comments.

Several responses directly mentioned perceived reliability as a concern: “The main reason I avoid flying [locally] is the lack of reliability.” “[Local air service] has proven to be totally unreliable.” Others relayed personal stories: “The last time I booked a flight, massive delays forced us to drive to [a hub] at the last minute to catch a different flight.” A few mentioned the local airport’s reputation: “I have heard numerous times about the delays and unreliability of the [local] airport,” and “I have spoken with many people that have been stranded or missed connecting flights using the service.”

While this study did not attempt to conclusively link reliability and flight interruptions with leakage, many individuals indicated that the flight interruptions had changed their booking behavior, directly leading to leakage: “I used to fly [locally] for business and pleasure. When delays and cancellations became the norm, it just didn’t make sense any longer;” “I have been booked on many cancelled and delayed flights. It has happened enough that it is simpler and ultimately faster to fly out of [a hub];” and “I was so sick of missed connecting flights because of delayed or canceled flights ..., we stopped flying out of here and started driving to [a hub] or just driving all the way.” It also affected recommendations: “[Due to cancellations], I no longer encourage people to fly into [the local airport].” The findings are not believed to be unique to this city, as many other small community leaders and residents nationwide have expressed similar concerns about reliability.

4. Conclusion

The results indicate that reliability (defined here as perceived reliability) is likely important to travelers from small communities and can affect air travel choices (in particular the origin airport). Open-ended comments provided further evidence of this finding, as well as a possible link between poor perceived reliability and leakage.

These findings have theoretical and managerial implications. First, it is recommended that reliability is considered in future research on both flight choice and leakage from small communities. Second, airport choice, especially among passengers from small communities, may not be due solely to quantifiable attributes (like cost, flight time, and non-stop availability) but also to perceptions, like reliability. While objective measures of reliability are available, it is likely that passengers do not access this information before

flying. This research also combined two types of quantitative data (rating and ranking) with qualitative data in order to improve reliability.

There are several recommendations in the way small community airports should engage with airlines and the public. With airlines, the focus should not be based solely on current or potential routes, but also on reliability. Airport managers should also engage with the public to gauge their perception of service reliability. Improvements in reliability should be publicized. As well, positive comparisons to neighboring airports should be reinforced, to help affect perceptions of poor reliability, which may be due to isolated traveler experiences.

Current findings also lead to research opportunities. It is recommended that researchers more conclusively determine any linkage between reliability and airport choice. Actual reliability and leakage rates can be added to regression models of leakage (e.g. Phillips et al., 2005) across several small community airports or within a multi-airport region. Additionally, it can be determined if a recent flight disruption affects airline/airport choice for future departures.

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