

NORTHCENTRAL UNIVERSITY

**BUSINESS AVIATION AS AN ALTERNATIVE TO EXECUTIVE TRAVEL BY
THE COMMERCIAL AIRLINES**

A Dissertation submitted to

The graduate faculty of the Department of Business and Technology Management

In candidacy for the degree of

DOCTOR OF PHILOSOPHY

By

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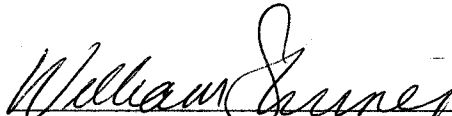
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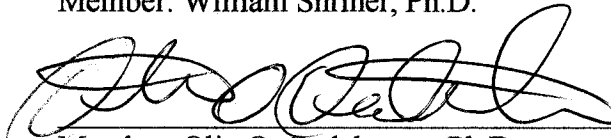
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ABSTRACT

Business Aviation as an Alternative to Executive Travel by the Commercial Airlines

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Executive travel by commercial airlines often results in excessive nonproductive time decreasing corporate efficiency. Aviation analysts have asserted business aviation can be a cost-effective alternative, but they theorize it is underutilized because business managers perceive it to be an expensive executive perquisite. A quantitative study was conducted to assess the perception of managers pertaining to the cost-effectiveness of business aviation. A survey was randomly administered to 128 business managers in six U.S. metropolitan locations. Descriptive statistics, analysis of variance, and correlation analysis were used for evaluation. The statistical results indicated managers widely perceive the use of business aviation to be no more than an expensive executive perquisite and not a cost-effective alternative for executive travel by the airlines.

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Chapter 1- Introduction

Overview

The need for business travel has never been more significant than in the era of high technology product development, fast-paced economic growth, and free-market strategic alliance building (DeFrank, Konopaske, & Ivancevich, 2000). Executives face increasing pressure to travel more frequently because of contemporary trends in the business world: downsizing leaves fewer executives available for the oversight of corporate activities; mergers create larger companies, requiring executives to oversee widely dispersed geographical enterprises; high priority customer interfaces and negotiations take place at almost any time and place (National Business Travel Association, 1998).

With an increasing number of companies becoming involved in highly competitive and complex markets, the need for executives to travel by air to conduct critical business activities and develop and maintain key relationships has increased markedly (Agur, 2000). At the same time, according to Jarchow (2004), commercial airline service quality and schedule reliability have deteriorated steadily since the economic deregulation of the industry in 1978. Combined with the devastating industry effects of September 11, 2001, this situation has resulted in a notable increase in travel time required when using the commercial airlines for business travel (Bowen & Headley, 2000).

Sharkey (2006) described a typical day of travel for a contemporary businessperson--waking up at 5:00 a.m. and traveling all day in order to arrive at his or her destination. A trip from Tucson, AZ to Newark, NJ includes over 12 hours of travel

including check-in waiting time, connections, layovers, and a misrouted bag. During this time, the traveler is uncomfortable and hungry. The business meeting then takes place the next day. More than likely, the return trip cannot be made until the following day, turning a four-hour business meeting into an exhausting three-day trip.

Commercial airline travel to support business requirements has become a way of life for many executives, and the value of their time has never been of greater concern (DeFrank, Konopaske, & Ivancevich, 2000). A study by DeFrank et al. (2000) revealed that some people may regard modern communications technology (e.g., telephone conferences, cellular phones, e-mail, and videoconferencing) as viable alternatives to executive travel. Conversely many management analysts clearly reject this line of reasoning. DeFrank et al. contended that an executive's presence in the business setting is absolutely essential for initiating and maintaining business relationships and responding appropriately to new business opportunities. Sheehan (1999) believed the need for face-to-face business meetings continues to increase: it is not only a matter of corporate visibility, but also an indication of the importance a company places on its present and potential customers. DeFrank et al. predicted that for the foreseeable future air travel will remain a critical aspect of businessmen's work life and destine them to remain road warriors in the time-consuming and energy-draining commercial airline system.

Karlgard (2005) does not believe the airlines themselves are totally responsible for the business traveler's problems. He stated that one of many reasons is it's the antiquated air traffic control system that simply cannot keep pace with high congestion in the hub-and-spoke system. Karlgard emphasized he does not believe these problems as this are going to go away soon.

According to Sharkey (2006), smart business managers are using business aviation as an alternative to the time consuming executive travel problems associated with using the airlines. The monetary cost of on-demand, highly efficient, and fast business jet services may be two or three times that of airline travel, but right away the traveler saves two or more workdays per trip. Additionally, as assessed by Sharkey, if a few people travel together, business aviation can even match the price of the airlines. However, Sharkey stated that only a relatively small number of companies are beginning to understand the value of utilizing business aviation.

Statement of the Problem

The commercial airline operations have evolved into a system that is extremely inefficient in terms of accommodating an executive's valuable time (Agur, 2000). Advanced airport check-in, security-screening delays, the necessity to transfer at hub airports, commonplace delays and cancellations, baggage-retrieval wait times, and overnight stays consume a great amount of an executive's time (Kovach, 2000). A combination of such routine time-consuming activities can cost a company thousands of dollars in nonproductive executive time (Kovach). As asserted by Agur, because managers focus on lower monetary costs without considering the potential benefits of business aviation, corporations utilize the scheduled airlines for their executives' travel requirements which results in a significant loss of corporate efficiency and profitability.

Studies have confirmed that the use of business aviation can minimize executive nonproductive travel hours, and the value of executive time saved can offset the difference in monetary cost (Castro, 1995). However, business aviation theorists as Castro and Kovach (2000) believed American industries do not accept that business aviation is no longer an expensive executive perquisite, but is a business management

tool as necessary as cellular telephones and laptop computers. Higdon (2002) emphasized that business aircraft should no longer be regarded as a convenient way for high-paid executives to travel about the country, but as leverage for optimum success.

As described by Olcott (2005) corporate America tends to hold to the stigma of the 1950s and 1960s when corporate jets were an elite form of travel, more related to corporate prestige and status symbolism than operational efficiency. According to Krane (1999), a general lack of corporate management knowledge and understanding exists in the business management world concerning the potential ability of contemporary business aviation programs to improve corporate competitiveness and profitability. Sheehan (1999) asserted that many company managers have a mind-set that the cost of business aviation cannot be justified. Sharkey (2006) pointed out that only a relatively small number of companies have learned how to use business aviation to their advantage.

Business aviation analysts have contended that executives experience excessive nonproductive time by use of the airlines, but corporate managers resist utilizing business aviation because of its image as an executive perquisite. However, studies have not been conducted to verify the existence or extent of this perception. This dissertation was designed to develop a body of knowledge associated with managers' perception of business aviation. The principle objectives of the research were to examine the degree to which managers perceive business aviation as no more than an executive perquisite, and if so, to identify if there is a relationship between the managers' ages or years of management experience associated with their opinion.

Research Questions. The following research questions were developed based on the problem statement. These research questions provided guidance for the review of

related literature and past studies pertaining to the use of business aviation. Subsequently, these questions guided the development of the hypotheses and appropriate methodology to carry out the research.

1. To what extent do corporate managers believe executive travel using the commercial airlines results in excessive nonproductive time?
2. Do managers believe that business aviation is not a cost-effective alternative to executive travel by the commercial airlines?
3. Do managers believe that business aviation is no more than an expensive executive perquisite and is not a cost-effective management tool?
4. What difference in opinion, if any, exists between managers' age groups regarding the cost-effectiveness of business aviation?
5. What relationship, if any, exists between years of management experience and the perception of business aviation as only an expensive executive perquisite?

Purpose and Significance of the Study. The efforts of Castro (1995) and Kovach (2000) to promote the use of business aviation during the 1990s have become outdated by more recent business aviation programs. Over the past five years, a new marketplace of business aviation services (e.g., the jet card) has emerged, with increasing potential to improve corporate efficiency, competitiveness, and profitability. As described by Rimmer (2005), there is little doubt many more companies now exist where the use of business aviation could maximize profits. However, as Sharkey (2006) emphasized, only a relatively small number of American companies have learned to utilize business aviation as a cost-effective management tool.

The purpose of this research was to develop a body of knowledge that has not previously existed. Specifically, its objective was to define the extent to which managers believe that business aviation is no more than an expensive executive perquisite rather than a cost-effective management tool. Further, to statistically analyzed the findings of the study to determine if a significant difference exists in the opinion of managers based on their age group or years of management experience. The knowledge developed by this study is intended to assist business aviation advocates and corporate leaders in identifying situations where the potential advantages of business aviation may be overlooked due to management perception.

The significance of the research is its association with promoting the principles of commerce and open competition. American companies operate in a highly competitive environment where innovation is needed to improve efficiency and to reduce costs. Successful, profitable companies strengthen the economy and provide consumer value in their products and services. Sharkey (2006) contended that companies who do not

explore the potential of business aviation as a cost-effective management tool may be jeopardizing their livelihood.

Definition of Key Terms

Business Aviation – Business aviation is the sector of for-hire aviation operated under Federal Aviation Regulations Part 135. Business aviation typically utilizes small aircraft under pay-per-hourly user agreements. Included in this sector are charter aircraft, air taxis, and various fractional aircraft ownership and jet card programs.

Executive – For the purpose of this study, an executive is defined as a corporate member who is empowered to carry out business duties and responsibilities of a firm. The term is used generically to include teams of executives, senior managers, company officers, technical experts, and administrative staff members who have corporate responsibility for profitability and growth, and who are substantially compensated.

Fractional Ownership – With fractional ownership, a corporation pays for the use of a portion of an aircraft's annual operating time. A typical example is a 1/8-ownership contract that provides a corporate fractional aircraft owner with 50 hours of on-call flying time per year.

Jet Card – A jet card is a flat-fee, pre-paid credit entitlement to on-demand corporate flight services. A jet card may be purchased, for example, for 25 hours of flight time for up to six passengers to travel, within eight hours' notice.

Brief Review of Related Literature

The review of literature conducted to support this research included documentation of several previous studies and current concepts concerning the problems and issues corporations face in efficiently utilizing the time of their executives when their primary mode of travel is the commercial airlines. The review revealed evidence that

business aviation is often a cost-effective alternative to airlines when the true value of executives' time is assessed. As defined by Castro (1995), the worth of an executive's hourly time is not merely his or her compensation divided by hours worked. In such a case, no profit margin would exist. Conversely, business analysts such as Kovach (2000) suggested the real hourly value of an executive's time to a corporation is a factor of at least 5.7 times their compensation.

The review of relevant literature also found the use of business aviation provides many intangible benefits to its users. However, because the benefits of business aviation and its cost-effectiveness are difficult to measure, many corporations do not adequately investigate them. Such experts in business aviation as Castro (1995), Kovach (2000), and Sheehan (1999) agree that much of this oversight is the result of outdated accounts of the lavish use of corporate aircraft. As a result, a shadow of doubt is cast on the cost-effectiveness of business aviation; thus, many corporate managers resist its use rather than considering it a potential asset in the business environment (Kovach, 2000).

Highlights and Limitations of Methodology

The research utilized methodology designed to develop statistical inferences pertaining to managers' perceptions of business aviation as being no more than an executive perquisite rather than a cost-effective management tool. Surveying managers and compiling data for calculation of descriptive statistics, one-way ANOVA, and Pearson r correlation analysis were used to conduct the research. Statistical power analyses were applied to identify the sample size and the effect needed to provide reliable results. A limitation of the methodology was that it could not attempt to identify causal factors; the diversity of managers and industries within the United States does not allow such analysis within the scope of this research. An additional limitation of this study was

that it did not approach identifying the survey respondent's management level within their corporations. This had no known application to the study. However, post-study reviews found this information may have been pertinent and a recommendation for inclusion of this data in future studies was made.

Assumptions. The primary assumption applied to this research was that participants understood that the term *business aviation* refers to any form of air taxi, charter, leasing, fractional ownership, or pay-per-hour jet card service. It was assumed that these services were available to all companies involved in the sampling. It was anticipated that an adequate number of subjects would be willing to participate in the study and that the management population would provide an appropriate volume of data for the purpose of developing statistical inferences concerning their perception of business aviation as an executive perquisite.

Limitations. The research was limited by time and funding constraints. As an academic study, the timeline of procedural research tasks were required to coincide with scheduled university term completion dates to a reasonable degree. Further, no external funding was available to provide the researcher with data collection assistance or with travel costs. For these reasons, the study was conducted from a single Midwest location. Data gathering was designed to obtain a cross-sectional sampling of businesses within the United States by use of electronic communications, in-person and telephone interviews, and mailings during the period of the study.

Research Expectations

The primary goal of this research was to develop a representation of how managers in the United States perceive business aviation as a potential cost-effective alternative to executive travel by use of the airlines. The study was designed to assess the

extent to which corporate manager's perceive business aviation to be merely an expensive executive perquisite, and to determine if there are management demographics related to their perception. This knowledge is intended to contribute to the field of study concerning executive business travel. Regarding the value of this research to society, the outcome of this study may lead to increased corporate attention to executive travel strategies and policies. This can potentially result in improved corporate efficiency and competitive strength.

Chapter 2: Review of Related Literature

The review of literature conducted to support this research focused on identifying informative data, prior studies and research associated with the commercial airline travel environment and the cost effectiveness of business aviation as an alternative for corporate executive travel. This chapter provides a synopsis of the most relevant documents studied.

The Commercial Airline Travel Environment

Dann (2003) asserted that no American industry has been more consistently plagued with problems, crisis, and setbacks than the commercial airlines. Since the Air Transportation Deregulation Act of 1978, the airline industry has undergone 27 years of financial instability, with over 100 bankruptcies (Dempsey & Gesell, 1997). Additionally, the highly competitive nature and the inherent business risks of the industry were compounded by the events of September 11, 2001 (Dann). As Jarchow (2004) explained, the airline industry has since lost sight of fundamental management practices. The result has been long check-in and security lines, poor customer service, fewer benefits to frequent fliers, and increased flight delays and cancellations. Business travelers can be delayed an hour or more and miss connecting flights if an airplane needs a simple tire change. The airlines' cost-cutting efforts have reached the point that mechanics, when available, do not have common spare parts and equipment on hand (Jarchow). According to one particular airline manager, things go better when the weather is bad or the system is bogged down and people expect delays. When things are at normal operating pace, it is extremely difficult to make everything work right and on time (Jarchow).

The Federal Citizen Information Center (FCIC) (2005) cautions air travelers that no matter how well a person may plan, travel by the airlines today is problem-prone. Airline delays caused by bad weather, airport congestion, and aircraft mechanical problems are commonplace. Adding to these problems, overbooking (selling more tickets than there are available seats) is legal, and the airlines take full advantage of this fact to ensure all flights are full. Passengers who are *bumped* are left behind. In addition, the rate of damaged or lost baggage continues to rise (FCIC). The FCIC advisory is clear in informing airline passengers of the likelihood of experiencing one type of problem or another when traveling by the commercial airlines.

With such difficulties in mind, Lauren (2001) described a typical scenario in which a businessperson arrives at an airport two hours before a flight, only to find him or herself sitting on the taxiway for an hour and a half waiting to take off. Lauren also pointed out that the airways are so congested and troublesome that the airlines themselves often have little control over delays. Overall, delays increased 19% in 2001 with the average arrival delay of fifty-two minutes and the number of takeoff delays of more than one hour increased 165% (Lauren).

Newman (2004) emphasized that while the airlines have recovered somewhat from the effects of September 11, 2001, they have experienced many additional problems. The airline industry has been a persistent exception to textbook economics, and this situation is not expected to change. As a result of adverse occurrences in the past five years, airline revenues have fallen 20% to 30% of the average level of the previous 25 years, and the time-cost value proposition of business travel continues to decline (Newman). The airlines recognize the elasticity of business travel ticket prices and the

inelasticity of the leisure traveler's cost. Therefore, in order to offset losses, the airlines increase the cost of the business traveler's ticket prices (Jarchow, 2005). In addition, Newman contended that the delays, inconvenience, and uncertain destination time of arrival will continue well into the future.

American, Continental, and Delta Airlines have all posted steep quarterly losses in early 2005 due to increasing fuel prices ("Oil prices fuel losses," 2005). In an effort to stay in business, these large legacy air carriers must find more ways to lower costs. Fuel costs will be a significant factor in shaping the future of the airline industry. In 2004 alone, rising fuel bills have resulted in the need to restructure and to consider more airline mergers. However, even these measures do not appear to have the potential to bring financial stability to the commercial airline market. Many airlines have little choice but to continue layoffs and to place more seats into aircrafts. Obviously, the result will be more delays, frustration, and discomfort for the business traveler ("Oil prices fuel losses," 2005).

Citing airport congestion as a constantly growing problem that directly affects flight delays and safety, Brueckner (2003) addressed three proposed solutions to this problem. The first involves increasing the capacity of major airports by adding more runways; however, this solution is not feasible because of the lack of available land and the large amount of money required. A second possible remedy is to improve the air traffic control system, but this process would be slow and expensive even if funding were available. A third proposed action would be to impose *congestion pricing* on the airlines: in essence, airport users would pay higher fees for airline services during peak demand hours, directly translating into higher ticket costs for many travelers.

Belden (2002) perceived the problems of the airline industry as having a direct effect on the productivity of business travelers and their ability to carry out their corporations' business plans efficiently. Newman (2004) has little expectation that the problems involved with airline travel will show an improvement in the foreseeable future. These aviation experts contended that corporate executives who need to travel have little hope of optimizing organizational efficiency and profitability as long as they are dependent on the commercial airlines.

The Value of an Executive's Time

For executive travel, companies typically perceive commercial airlines within the hub-and-spoke system to be more economical at face value than point-to-point business aviation services (Castro, 1995). However, much depends on what is being measured. According to Castro, the cost of an executive's nonproductive time by use of the scheduled airlines rather than business aviation can be monumental. Further, if more than one executive is traveling, a business aviation flight may even be less expensive than the airlines, monetarily speaking (Castro).

"Benefits of business aviation" (2004) identified time saving as a measurable corporate financial benefit associated with the use of business aviation for executive travel. This premise is in agreement with the opinion of business aviation experts Castro (1995) and Kovach (2000), and they asserted the time saved through the use of business aviation must be calculated using a productivity factor to determine the actual real value of this time. Depending on the travel requirements of a particular corporation, executive use of business aviation for transportation could easily be an asset rather than a detriment ("Benefits of business aviation" 2004).

Castro (1995) emphasized that few companies recognize the benefits of business aviation. He referred to *Fortune Magazine's* measure of executive productivity, which is based on the overall picture of a company's financial performance and how executives spend their time. A productivity factor is used as a multiplier of executive compensation to calculate the true value of an executive's time to the corporation. Industry standards have set this factor at 5.7 (Kovach, 2000). For example, an executive who earns \$200,000 a year (approximately \$100.00 per hour), the hourly value of his time is \$570.00 per hour to the corporation ("The real value of executive time," 2001).

The Efficiency of Business Aviation

Agur (2000) emphasized that the door-to-door travel time of airlines is most often dramatically greater than that of business aviation. Airline travel typically involves significant nonproductive time for parking and airport shuttle, counter check-in, security screening, boarding, in-route delays, baggage recovery time and often overnight stays. Users routinely describe business aviation services as an important tool for leveraging three of their most important assets: their people, their customers, and their time. A common economic advantage of business aviation is the ability to schedule trips on demand, with three or four executives traveling to one or more meetings and being back home the same day (Kovach, 2000).

Table 1 provides a summary of typical trips an executive may make and compares the difference in travel time between business aviation and the commercial airlines.

Table 1

Travel Time Comparisons

<u>City pairs</u>	<u>Business aviation</u>	<u>Commercial airlines</u>
Austin, TX – St. Martin	5.1 Hours	15.0 Hours
Boston, MA – Palm Beach, FL	3.0 Hours	5.5 Hours
Chicago, IL – Sun Valley, CA	3.3 Hours	7.5 Hours
Denver, CO – Vancouver, BC	2.7 Hours	5.0 Hours
Greenwich, CT – Nantucket, MA	0.9 Hours	4.5 Hours
Palm Springs, CA – Cabo San Lucus	2.1 Hours	6.0 Hours
Washington DC – Sacramento, CA	5.2 Hours	10.0 Hours
Totals:	22.3 Hours	53.5 Hours
Difference:	-31.2 Hours	

MarguisJet (2005).

As illustrated by Table 1, travel by business aviation required less than half the time of commercial aviation. Depending on the compensation level and the number of executives traveling, multiplied by their productivity factor, business aviation can result in lower cost than use of the airlines (“Business travel,” 2005). McGarvey (2003) asserted that in many cases the use of business aviation can provide busy executives with up to a month of additional productive time per year as a result of the travel hours they save, and when considering productivity factors, corporate savings can be substantial.

The Aviation Consultant web site strongly contended that the primary advantages of business aircraft are flexibility and timesaving (“Benefits of business aircraft,” n.d.).

Flexibility provides the business traveler with the means to travel when desired and while the commercial airlines operate from only 4% of the 5,000 U.S. airfields, business aircraft can use almost all of them, bringing the businessperson directly to his final destination and in many cases back home the same day.

Even though the timesaving and flexibility of business aviation are intuitively obvious to the causal observer, Agur (2000) stated that potential users of business aviation tend to reject its use primarily based on their perception of its high monetary cost. Moreover, they focus on the low price of an airline ticket in comparison to the business aviation costs of thousands of dollars per flight hour. While business aviation appears to be expensive--and by conventional measures it is--this view is superficial. A deeper analysis often reveals business aviation is the less expensive way to travel when all costs and benefits are weighed appropriately (Agur).

A study conducted by J. D. Power and Associates ("Utilization Strategies," n.d.) provided further insight on this subject. A cost model developed in their study defined a corporate 500-mile business trip by four executives whose total annual compensation averaged \$250,000 or approximately \$500.00 per hour combined. Adding an industry standard productivity factor of 5.7, their aggregate time was worth \$2,850.00 per hour. Total time for travel by the airlines was estimated to be three hours each way at best, amounting to \$17,100 (6 X \$2,850.00) of nonproductive time with a ticket price of \$1,200.00 (\$300.00 each). The total travel cost was then \$18,300.00. However, it is unlikely that the executives' business could be conducted in one day and still permit return travel because of the airline schedules. An overnight stay, with estimated hotel and

personal expenses of \$250.00 per person, added an additional \$1000.00, for a total of \$19,300.

This cost was compared to the cost of using a typical business aviation jet service for the same travel requirement at a cost of \$4,000 per flying hour. Total travel time using business aviation was estimated to be 1.5 hours each way for a cost of \$12,000 (3 X \$4,000). This cost is ten times that of using the commercial airlines based on ticket price alone. However, this figure does not provide a true picture of actual costs. Table 2 depicts the results of this study to illustrate the cost-effectiveness of business aviation.

Table 2

Travel Cost Comparison

<u>Travel element</u>	<u>Commercial travel cost</u>	<u>Business aviation cost</u>
Fare	\$1,200	\$12,000
Travel Hours Labor Cost	\$17,100	\$8,850
Hotel/Per Diem Cost	<u>\$1,000</u>	<u>0</u>
Total Costs	\$19,300	\$20,850

Note. Business aviation cost and flight time factors used in calculations were estimated by the author based on available airline industry standards.

The J. D. Powers and Associates' simulated travel study ("Utilization Strategies," n.d.) implies the use of commercial airlines costs \$1,550 less than the use of business aviation for the travel scenario described. However, many intangible factors in favor of business aviation must also be considered. For example, business aviation travel time can be used productively since business meetings can take place during travel. In the Powers

scenario, if only half the travel time was used for business, or if even one more executive traveled, the total travel costs would be less than the cost of the commercial airlines. Some value must be allotted to the ability of business aviation to return the travelers home the same day so they would be rested and ready for work the next day. At the time of the Utilization Strategies (n.d.) study, J. D. Powers failed to acknowledge the intangible advantages of business aviation. If this had been done, it could be expected the effects of airline delays, escalating fares, and the size of corporate traveling parties could dramatically skew the travel cost and efficiency comparisons in favor of business aviation over the commercial airlines.

Business Aviation Travel Programs

The Aviation Consultant Group is of the opinion that most corporate managers are not familiar with modern business aviation programs and often simply regards business aircraft users as big spenders (“Why use business aviation?,” 2001). Many corporate managers and decision-makers do not have first-hand knowledge of the factors that may make the use of corporate aviation right for their company. Moreover, they do not acknowledge that dependence on the airlines for business travel could be costing them potential sales and profitability that could be improved by the flexible scheduling and increased executive productive time that business aviation can provide (“Why use business aviation?,” 2001). Additionally, with the degree of decentralization among corporations, business aviation can provide a strategic advantage by facilitating travel to plants in geographical areas that are increasingly becoming inaccessible by the airlines (“Why use business aviation?”). Thus, fewer top managers would be needed to oversee operations, further offsetting the cost of business aviation.

Murphy (2002) emphasized that there are alternatives to the more expensive business aircraft charter travel option for corporate executives. One such option is a *bite-sized* executive jet user program. Corporations no longer have to make large investments or commitments to aircraft charter and leasing services. They can now enjoy the speed, comfort, and economy of aircraft such as the Cessna Citation V for as low as \$109K for 25 hours of flight time to go anywhere with an eight-hour notice. The economy and utility of the emerging new market of business aviation service providers can save valuable executive time at prices equivalent to or lower than those of commercial airlines, depending on the number of travelers and the number of trips taken annually (Murphy).

O'Neil, Samelson, and Wingate (2003) also addressed private business aviation options corporate management typically does not consider. Purchasing a corporate aircraft, the most expensive option, is normally efficient for large companies that use aircraft for 400 or more flying hours per year. Chartering, leasing, and fractional ownership plans are other alternatives, but they have moderate cost considerations, and commitments to purchase agreements and monthly fees are involved. However, they may fit a particular company's needs and should not be overlooked.

Gilden (2005) defined the emergence of the jet card industry as a 21st-century concept that has made it possible for small to medium size companies to take advantage of business aviation. Business travelers whose companies cannot afford to own, lease, or maintain a fleet of private jets can now buy some of these privileges and benefits at a much lower cost. A company can buy increments of jet service 25 hours at a time and these services allow executives to fly on very short notice. The jet card involves no positioning fees, additional insurance premiums, or other commitments beyond the 25-

hour service the company purchased; a company that uses up its purchased time can buy additional five-hour blocks of flying time as needed (Gilden).

Allison (2003) illustrated the economics of the jet card and its advantages to smaller businesses. A client who pays roughly \$100,000 for a 25-hour card receives all the benefits of the more expensive leasing or fractional ownership programs. Executives who fly fewer than 60 hours a year find jet card programs advantageous, primarily because the cost of the card is guaranteed and they can budget their travel requirements to optimize their time (Allison). Unlike fractional ownership programs, jet card programs require clients to pay for only the time they use, with no hidden costs involved. Jet cards are the new symbol of small business success, and the growing market of users is reducing prices by lowering service providers' overhead and thus making jet cards more cost-effective (Allison).

Higdon (2002) contended that business aviation should no longer be regarded as a convenient way for executives to jaunt about the country. He described the many business aircraft types that are capable of serving the global market. Instead of enduring long, crowded flights across the country, business travelers can now cruise 6,000 miles at almost 600 mph in spacious, fully business-equipped cabins as they conduct meetings and other business activities in privacy. Such trips do not require dealing with strangers, multiple security checkpoints, layovers, or connections to make (or to miss).

Business aviation experts such as McGarvey (2003) have made a strong stand for three important aspects of business aviation. First, while it is impossible to manufacture time, business aviation provides a way to make more executive productive time available. Second, a corporate aircraft should be considered a *flying office* and not an extraneous

corporate expense. Last, the aspect of workplace privacy and security that business aviation travel provides is an asset that protects sensitive corporate information--a value that companies do not often take into consideration. McGarvey (2003) offered these tenets as evidence of the powerful advantages business aviation can provide its users.

Stakeholder Considerations

A white paper developed by Andersen (2001) was offered as a guide for companies that need to quantify the value of business aviation to their shareholders. The methodology presented was based on first assessing the benefits of business aviation to the operation of the corporation, and then translating these benefits into shareholder value drivers. The corporate benefits assessed included increased employee productivity through time savings, the ability to expand markets quickly, improved operational efficiency and risk management, and the ways business aviation offsets company expenses (e.g., decreasing or eliminating travel, hotel, meal, and entertainment costs; decreasing employee turnover rates; and, reducing staffing levels). Top stakeholder value drivers include potential revenue growth by capturing market share ahead of competitors, the relationship between business aircraft expense and profit margins, asset use efficiency ratios, and employee and customer satisfaction. The Anderson white paper recommended that companies perform these analyses based on a 12-month period of on-demand aviation activities either after the fact or by theoretical projections, and compare the attributes of business aviation to those of the commercial airlines. The report concluded that business aviation could be a valuable tool for many corporate stakeholders.

Business Aviation Users

The Business Wings web site provided a characterization of typical business aviation users today. They include sales representatives, technicians, engineers, doctors, and--of course--corporate managers ("Who flies?," 1998). Business aviation users were found to range from small companies owned by individuals to large international organizations. Rimmer (2005) asserted that a main reason for the growing use of business aviation is the changing pace of business and modern corporate structures. Business aircraft and user programs come in all shapes and sizes, and astute managers in corporate America are finding them increasingly practical and profitable (Rimmer).

Agur (2000) offered the example of a mid-size Atlanta company that has a major operating facility 140 miles away, in Birmingham, Alabama. Travel between these locations by managers, engineers, technicians, and administrative personnel are required on a regular basis. Even with one-week advance airline ticket purchases, the average cost is \$553.00 dollars for a round trip per person, not including personal expenses.

Exhaustive studies and negotiations with the airlines and business aviation providers reveal that the company's best option was to utilize a scheduled business aviation shuttle system. As a result, the company saves hundreds of thousands of dollars on annual airline travel costs and operates much more efficiently. A key point of this example is that business aviation is not only efficient and cost-effective when highly paid executives fly, but also when a variety of employees use it as well.

Krane (1999) affirmed business aviation users transport many corporate personnel in addition to high-paid top management. The passengers of corporations that use business aviation typically include 60% top management personnel and 30% middle

managers. The remaining passengers are various levels of company employees and, at times, corporate clients.

Intangible Benefits of Business Aviation

Many studies have been conducted to identify the intangible benefits of business aviation, with similar findings. The National Business Travel Association (1998) published a list of the most prevalent intangible benefits reported to them:

1. Saving Employee Time – Business aviation is considered a time multiplier. It allows corporations to schedule its employees' travel efficiently and to fly them
Increased Productivity En Route – Business aircraft are actually fully equipped flying offices, allowing productivity during flying hours in an uninterrupted business environment. Employees aboard business aircraft are estimated to be eight times more productive than those flying on commercial airlines.
2. Minimizing Non-Business Hours Away From Home – Family time before and after standard business hours is critical to most employees and can affect morale and productivity. Business aviation allows flexible scheduling and minimizes overnight stays and time away from home.
3. Competitive Security – Avoiding or reducing eavesdropping, travel visibility, and unwanted and unnecessary conversations and interruptions promote the use of business aviation to safeguard corporate sensitive information.
4. Maximizing Personnel Safety and Peace of Mind – Business aircraft are flown by professional crews and have a safety record comparable to that of the largest scheduled airline. Peace of mind results from complete company control over the operation of the aircraft and its passengers.

5. Projecting a Positive Corporate Image – Customers, vendors, and suppliers regard the arrival and departure of company personnel by business aircraft as the sign of a well-run company's keen interest in efficient time management and high levels of productivity.
6. Attracting and Retaining Key People – The right person at the right place at the right time can often mean the difference between business success and failure. Keeping the right people can hinge on many factors, including reasonable travel schedules and personal accomplishment. The use of business aviation can make this difference. Additionally, retaining experienced personnel prevents costly training programs.
7. Optimizing Payroll – Under *rightsizing* initiatives, many corporations have found the need to maintain a high level of management and leadership productivity with fewer people. The use of business aviation is a significant tool for eliminating the need for more management personnel and thus reducing payroll and maximizing market opportunities.
8. Truncating Cycle Times – The compound effects of time saved and increased personnel productivity provided by business aviation can reduce cycle time to develop new products and finish new projects quickly.
9. Charging the Entrepreneurial Spirit – By minimizing the barriers of travel, business aviation often allows companies to be more ready to consider opportunities and act upon them. Business cultures and strategies change quickly with today's dynamic markets, facilities, and customers in all parts of the country.

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Misconceptions about Business Aviation

Agur (2000) pointed out that economic corporate travel provides the best value for the dollar, but many corporate managers believe business aviation cannot be economically justified. According to Agur, corporate executives are not measuring the true value of business aviation and assessing its monetary price tag compared to commercial airline ticket costs. A study conducted by J. D. Power and Associates, contended corporations that do utilize business aviation may recognize the benefits, but they find it difficult to measure this value accurately ("Utilization strategies," n.d.). Olcott (2005) found that companies, particularly those that are publicly owned, are extremely reluctant to promote the use of business aviation and maintain a low profile whenever the subject of business aviation is discussed, even if they could provide acceptable measures of its value. They prefer not to undergo the scrutiny of explaining their rationale for choosing to use business aviation.

Olcott (2005) made a strong case for what he believes to be the underlying reason for corporations' resistance to the use of business aviation. He blames negative publicity from the time when private business jets were considered luxury transportation. In the

1950s and 1960s, the news-hungry media had a penchant for criticizing corporate jets and accordingly had a powerful influence on their acceptance and use. Investigative reporters in the past went so far as to track down cases of \$6,000 shower curtains, lavish in-flight birthday parties, and corporate jaunts to the Super Bowl (Olcott). When covering cases of corporate malfeasance, writers invariably relayed infamous stories involving outrageous corporate behavior (e.g., a corporate Chief Executive Officer who launched a corporate jet aircraft across the country to bring back fresh asparagus for a party). Olcott (2005) asserted because of the media attention, corporations would rather evade client and stakeholder criticism than attempt to explain the efficiency and competitive advantages business aviation may provide.

Summary of Literature Review

Corporations' face many issues in efficiently utilizing their executives' time when using the airlines for business travel (Jarchow, 2004). The literature reviewed advocated the potential of business aviation to improve corporation efficiency. Studies as those conducted by Agur (2000) provided substantial evidence that business aviation can be an extremely efficient mode of travel and a cost-effective alternative to the airlines, when the true value of an executive's time is taken into consideration. Murphy (2002) emphasized that companies who do not take advantage of the utility and economy of the emerging new market of business aviation services will find it increasingly difficult to remain competitive. However, studies confirmed the cost-effectiveness of business aviation is typically difficult to measure; thus, many corporations do not conduct appropriate analysis to determine if its use would benefit their organization (Kovach, 2000).

Olcott (2005) proposed that a major barrier to corporate willingness to investigate the use of business aviation is the perception of managers who regard it as an expensive executive perquisite. Such stereotyping, according to Olcott, is the result of outdated accounts of lavish corporate aircraft use and its past association with only the elite, rich, and privileged. However, no apparent effort has been made to determine the extent to which this perception exists today and if particular management demographics are involved.

The dissertation was intended to contribute to the field of study concerning managers' perception of business aviation. The research conducted measured the extent of management perception that the use of business aviation is not cost-effective and defined the associated demographics. The knowledge developed by this study is intended to assist business aviation advocates and corporate leaders in assessing the scope of management perception. With this information, appropriately targeted intervention activities such as educational forums and travel policy reviews could be conducted.

Chapter 3: Research Methodology

This chapter defines the methodology used to examine the extent of management perception of business aviation as an expense rather than a potential cost-effective corporate tool. The chapter first restates the basic research problem and then defines the hypotheses that were developed through the review of relevant literature and previous studies. Also included are descriptions of the research design, instrumentation, selection of subjects, research procedures, and data processing. The final section of this chapter delineates the ethical assurances planned to prevent harm to all parties involved in the study.

Restatement of the Problem

Commercial airlines are inefficient in terms of accommodating the value of an executive's time (Bowen & Headley, 2000). As a result, each business trip involves many nonproductive hours spent on advanced airport check-in, security screening, transfers at hub airports, flight delays and cancellations, baggage retrieval, and overnight stays to accommodate the airline schedules. A combination of these routine time-consuming activities can cost a company many thousands of dollars in nonproductive executive time.

Corporations that utilize commercial airlines for their executive travel requirements merely because of a perceived lower monetary cost may be significantly detracting from optimum organizational effectiveness and profitability (Agur, 2000). However, Krane (1999) found a general lack of management knowledge and understanding of the potential cost benefits of business aviation programs. Much of the problem apparently stems from corporate managers' perception of business aviation as merely an executive perquisite. Such stereotyping can detract from companies' optimum financial performance.

Research Questions and Statement of Hypotheses

Research Question 1: To what extent do managers believe that executive travel using the airlines results in excessive nonproductive time?

H₁₀ = Managers do not believe that executive travel using the airlines results in excessive executive nonproductive time.

H_{1A} = Managers believe that executive travel using the airlines results in significant nonproductive time.

Research Question 2: Do managers believe business aviation is a cost-effective alternative to executive travel by the airlines?

H₂₀ = Managers do not believe business aviation is a cost-effective alternative to the use of the airlines.

H_{2A} = Managers believe business aviation is a cost-effective alternative to the use of the airlines.

Research Question 3: Do managers believe business aviation is an expensive executive perquisite?

H₃₀ = Managers do not believe business aviation is an expensive executive perquisite.

H_{3A} = Managers believe business aviation is an expensive executive perquisite.

Research Question 4: What, if any, difference in opinion exists between managers' age groups regarding the cost-effectiveness of business aviation?

H₄₀ = No difference exists between managers' age groups regarding their perception of the cost-effectiveness of business aviation.

H_{4A} = A difference exists between managers' age groups regarding their perception of the cost-effectiveness of business aviation.

Research Question 5: What relationship, if any, exists between years of management experience and the perception of business aviation as only an expensive executive perquisite?

H_{5O} = No difference exists between years of management experience and the perception of business aviation as being only an expensive executive perquisite.

H_{5A} = A difference exists between years of management experience and the perception of business aviation as being only an expensive executive perquisite.

Description of Research Design

A primary consideration in the design of this study was the diversity among corporations in the United States. They are widely geographically dispersed, organized by various corporate structures, include many types of businesses, and have different executive income levels and travel requirements. Trochim (2001) considered such diversity a barrier to the use of a true or quasi-experimental research design to measure the attitude of managers concerning business aviation: a random assignment of groups cannot assure them to be probabilistically equivalent. The result is an inability to identify and control extraneous variables. According to Hopkins (1998), when random groups are not assured to be equivalent, a high threat to internal reliability and validity of data exists because the association of unknown third variables among the groups may be causal factors affecting their opinions. A case study involving individual businesses was considered as a research design for this dissertation; however, company concerns about the confidentiality of corporate business strategies, executive travel scenarios, and personnel information and security in the business environment prevented such an approach.

For these reasons, the most appropriate design for the research was determined to be a cross-sectional study. The study utilized a survey instrument to gather data from various industry managers pertaining to their opinions about the cost-effectiveness of business aviation. The data collected were used to develop descriptive and analytical statistics. Descriptive statistics were used to assess management's awareness of airline travel inefficiencies and the associated loss of executive value, and to determine the extent to which managers perceive the use of business aviation as merely an expensive executive perquisite. Analytical investigations were conducted to characterize the demographics of managers and identify if a significant difference of opinion existed between the age groups of managers, and if a correlation existed between years of management experience and the level of resistance to the use of business aviation. Although these analyses cannot identify causal factors (Trochim, 2001), they can be used as indicators to predict what can be expected in the future without intervention to change the thought and behavior patterns of particular management groups.

Operational Definitions of Constructs and Key Variables

Agur (2000) asserted that economic corporate travel provides the best return on investments under any circumstances, and it is unfortunate that so many corporate managers believe business aviation cannot be economically justified. Agur stated that too many corporations perceive business aviation as a high-cost luxury and do not understand how it could be an asset to them. Olcott (2005) expressed that the benefits of business aviation can not be measured by a broad stroke: each individual company must weigh its many benefits carefully.

The primary research construct of the study was not intended to justify the use of business aviation as an absolute cost-effective management tool in every situation, but as

a potential asset that may be overlooked because of management's perception of it as a luxury. Business aviation analysts such as Krane (1999), Agur (2000), and Olcott (2005) contended that many companies have a negative perception of business aviation resulting in loss of efficiency. However, these analysts have not provided evidence to confirm this assertion. This research was designed to assess the existing perception of corporate managers toward the cost-effectiveness of business aviation and examine the demographics of the managers surveyed. The results of the study are intended to provide a body of knowledge pertaining to management's perception of business aviation as an expensive executive perquisite. The need for this study is significant because of the void of information needed to identify the scope of the problem and the particular management characteristics that may be involved.

The research utilized both univariate and bivariate statistical methods. Univariate measurements were developed using managers' responses to survey opinion questions, based on a Likert-type scale of 1 through 7. These measurements provided descriptive statistics to indicate manager's opinions regarding nonproductive executive time caused by commercial airline travel, the value of an executive's time to a corporation, the potential cost-effectiveness of business aviation, and the degree to which they perceive business aviation as an executive perquisite.

A one-way Analysis of Variance (ANOVA) was conducted using the four age groups of the survey participants and their average response to the survey question pertaining to the cost-effectiveness of business aviation. This analysis was used to determine if a significant difference exists in managers' opinion based on age.

A Pearson r correlation analysis was performed. This analysis applied the respondents' years of management experience as the independent variable. Responses to the survey question pertaining to the respondents' perception of business aviation as an expensive executive perquisite was applied as the dependent variable. The results of this analysis and test of significance were used to indicate if a linear relationship existed between years of management experience and opinion.

The data developed by these statistical analyses provided new information pertaining to the contemporary management's perception of the cost-effectiveness of business aviation. This statistical data has not been previously available in the past to business aviation analysts or corporate leadership.

Description of Materials and Instruments

A survey questionnaire was developed for data gathering. The questionnaire was structured in two parts. Part 1 was designed to collect demographic data to identify independent variables to be used in statistical analysis. It also identified participants who may work within the airlines or business aviation (e.g., a manager of an airline travel agency or a company that provides spare parts for business aircraft). These individuals were eliminated from the study for reason of potential bias.

The second section of the questionnaire contained opinion-based questions to provide measurable dependent variables. This section utilized a 7-point Likert-type scale with an opinion range of 1 to 7 for each question. This range was selected based on Trochim's (2002) discussion of the Thurstone scaling technique for survey response range options. The one-dimensional nature of the survey questions used in this study and the measurements of their results to be applied to the study constructs determined an opinion response range of 1 through 7 was appropriate.

For clarity, Table 3 defines the relationship of the research questions, hypotheses, survey questions, and statistics that were applied.

Table 3

Relationship of Research Questions, Hypothesis, Survey Questions, and Statistics/Tests

<u>Research question</u>	<u>Null hypothesis</u>	<u>Survey question</u>	<u>Statistics/tests</u>
To what extent do managers believe executive travel using the airlines results in excessive nonproductive time?	H ₁₀ = Managers do not believe that executive travel using the airlines results in excessive executive nonproductive time.	Business travel by the airlines results in excessive executive nonproductive time.	Descriptive Statistics and z-test
Do managers believe business aviation is not a cost-effective alternative to executive travel by the airlines?	H ₂₀ = Managers do not believe business aviation is a cost-effective alternative to the use of the commercial airlines.	The use of business aviation is not cost-effective.	Descriptive Statistics and z-test
Do managers believe that business aviation is an expensive executive perquisite and not a cost-effective management tool?	H ₃₀ = Managers do not believe business aviation is an expensive executive perquisite.	Typically, business aviation is considered an expensive executive perquisite.	Descriptive Statistics and z-test
What, if any, difference in opinion exists between managers' age groups regarding the cost effectiveness of business aviation?	H ₄₀ = No difference exists between managers' age groups regarding their perception of the cost-effectiveness of business aviation.	Age group	ANOVA and F Test
What relationship, if any, exists between years of management experience and the	H ₅₀ = No difference exists between years of management experience and the	Years of management experience	Pearson r Correlation and Test of Significance

perception of business aviation as only an expensive executive perquisite?	perception of business aviation as being only an expensive executive perquisite.
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Instrument Validity

As recommended by Patten (2002), a first consideration was to ensure the survey instrument questions were worded so that the results will provide accurate measurements of the research questions. A panel of Embry-Riddle Aeronautical University Professors, who are subject matter experts, assessed these parameters of the instrument. As suggested by Norland (1990), instrument face and content validity were then evaluated by using a small test group of respondents to complete the survey and participate in post-test interviews to determine if the questions were interpreted as designed.

The validity of the survey instrument was controlled by adapting methods described by Trochim (2001) for the specific purpose of this research. A primary consideration was to ensure randomization: the survey distribution was conducted in a manner that did not target particular groups of people, places, and times. Moreover, the survey was not administered to people who are all in the same industry. As well, the survey distribution was not localized by area in a section of the country that may be highly industrialized and dependent on business air travel, or conversely, in agricultural or rural regions that are not dependent on business air travel. Lastly, the survey was not distributed during a particular time frame that could result in respondent bias (e.g., when the airlines are on strike or when a serious accident involving a business aviation aircraft had been publicized).

Additional approaches to ensure internal validity of the survey involved the inclusion of a demographic question that asks the participants if they work for an airline

or business aviation service provider. Surveys with affirmative responses were excluded from the study because of the high potential of bias. Outliers to the mainstream respondents (e.g., respondents considered to have had a recent extremely positive or extremely negative experience with the airlines or business aviation) were eliminated from the study data. Survey results that were completely marked in the extreme columns of *strongly disagree* or *strongly agree* identified these respondents, and their responses were excluded from the statistical analysis.

Instrument Reliability. The reliability of the survey instrument was determined by the use of the Reliability of Measurement concept described by Shavelson (1995). This is a test-retest methodology. Initially, the survey instrument was administered to a cadre of ten local participants who would be available to respond to the survey again within a two-week period. Their responses to the survey opinion questions were used to calculate the correlation coefficient between the first and second administration of the survey. Nine of the participants were available to complete the retest and the result was a reliability coefficient of .86. This was considered acceptable, and no further adjustments to the survey were made.

Selection of Subjects

The subjects of this research were randomly selected corporate managers of businesses within various industries and localities in the United States. No specific qualifications were required other than that the subjects held a management position. The number of samples needed to support this research was determined as described in the procedures below.

Procedures

For purposes of economy and control, a cluster sampling technique was employed to collect data from six United States metropolitan regions. The specific regions included Boston, Massachusetts; Cincinnati, Oh; Columbus, Ohio; Dayton, Ohio; Tampa, Florida; and Phoenix, Arizona. Participants were selected randomly by use of business telephone books retrieved from these areas, and surveys were mailed to the potential respondents. Telephone and in-person interviews were also conducted to obtain the number of samples needed.

The sample size required for this study was determined by using statistical software (G*Power) to achieve statistical power of .80, effect of .50, and significance of .05. The sample size needed was calculated to be 128. The data collection effort continued until this number of completed and acceptable surveys was obtained. This required contacting approximately 250 potential participants within an unknown total number of managers within the United States.

Upon completion of the data collection process, appropriate basic statistical and electronic power analysis tools and methods were utilized to develop statistical data to evaluate the study hypotheses and answer the research questions. In addition to the use of descriptive statistics and z-tests, a one-way ANOVA and Pearson r product moment correlation analysis were conducted.

Following development and presentation of the research findings in Chapter Four, a discussion of the statistical analysis and hypothesis testing is provided. From these data, the conclusions and recommendations of this research were defined and are presented in Chapter Five.

Discussion of Data Processing

This study utilized descriptive and analytical statistics to determine the extent of stereotyping among managers regarding the cost-effectiveness of business aviation.

Descriptive statistics were used to develop inferences from the sample data concerning the characteristics of the management population regarding their opinion of the cost effectiveness of business aviation. Excel spreadsheets and statistical software templates were used to calculate the mean values of the survey questionnaire responses. These results were subjected to statistical tests to provide confidence in their representation of the total management population.

A one-way ANOVA was accomplished using the mean response to the survey question that asks the respondent's opinion of the cost-effectiveness of business aviation. The mean of each of the four manager age groups was used to determine if a significant difference exists between the opinions of the age groups. The F-test of difference with a p-value of .05 was applied to assess significance. The F-test assumes the null hypothesis that no difference exists.

A Pearson r correlation coefficient analyses was performed to determine if a linear relationship existed between years of management experience and the perception of managers of business aviation being only an expensive executive perquisite. It was hypothesized that no correlation exists between years of management experience and this perception. The significance of the coefficient of correlation was tested to determine if the coefficient may have been obtained by chance and whether the respective hypothesis should be accepted.

Methodological Assumptions and Limitations

This study was intended to investigate the attitudes of corporate managers who have decision-making authority or substantial input regarding the use of business aviation in lieu of commercial airlines for executive business travel. The primary methodological assumption applicable to this research was that participants would understand that the term *business aviation* refers to any form of air taxi, charter, leasing, fractional ownership, or pay-per-hour jet card service. It is also assumed that these services were available to all companies involved in the sampling. It was anticipated that an adequate number of subjects would be willing to participate in this study, and an appropriate volume of data could be obtained for developing statistical inferences. A limitation of the research was that it could not identify causal factors associated with management perception or actual monetary values associated with the use or non-use of business aviation.

Ethical Assurances

Survey Questionnaire. The uniqueness of the research subject matter did not permit the use of an existing valid and reliable survey instrument for the data-collection process. Therefore, an original designed survey was created for the purpose of this study. Prior to its use, the survey was administered to a cadre group of respondents as a pilot study to assure consistency in its results. Instrument authenticity was ensured, since the use of an originally authored survey instrument eliminated the possibility of duplicating the work of another researcher.

The survey instrument was constructed in two parts. Part 1 consisted of questions for obtaining demographic information pertaining to the participants (e.g., years of management experience and age group). Part 2 was designed to obtain the opinion of the

participants about various aspects of business travel by air and their beliefs about the cost-effectiveness of private business aviation. In this section, a Likert-type scale was provided below each opinion question for the participants to indicate their level of agreement or disagreement by circling a number.

As discussed by Cozby (2001), the development and administration of a research survey questionnaire crosses many boundaries of behavioral science, and it must be recognized that most people are not comfortable when asked to answer questions. Therefore, the survey questions were constructed to ensure understanding. The survey Informed Consent Form (Appendix A) was designed to reinforce the fact that the results of the survey will be used only to develop aggregate statistical data and that individual responses will not be identified, or provided to third parties.

Research Participants. The target population for this study was corporate/business managers within United States industries. A primary consideration in defining the population to be studied was the diversity among the unknown number, at any one time, of small, medium, and large corporations in the United States. Furthermore, they are widely geographically dispersed, organized by various corporate structures, include many types of businesses, and have different executive income levels and travel requirements. For these reasons, the population could not be specifically defined; therefore, a cross-sectional research approach was taken. The subjects of this research were randomly selected corporate managers of small, medium, and large businesses within various industries and localities in the United States. These managers have the inherent responsibility to oversee corporate expenditures involving executive travel that is dependent on air transportation.

Consent to Participate. Trochim (2001) emphasized that researchers have an obligation to respect the rights of study participants by ensuring that they clearly understand the purpose of the study, potential risks, and benefits to them; that they are guaranteed anonymity and confidentiality; and that they have the right to withdraw their participation at any time. These principle tenets of ethical research administration were incorporated in these research activities. A summary of the overarching ethical considerations of Respect for Persons, Beneficence, and Justice applied to this study are described below and were upheld.

Respect for Persons. Participants of this research effort were free to accept or reject a request for their participation. The survey front matter clearly stated that

participation in this research is voluntary, without risk of retribution of any nature if the opportunity to participate in this research was declined.

Beneficence. It was anticipated a number of participants would request a copy of the statistical results. A perceived benefit of this may be for them to learn how their opinion fits within the mainstream concerning the use of private business aviation for corporate travel. Another benefit may be reactionary in that the questions asked in the survey may be thought provoking and cause the respondents to consider the value of business aviation to their company. In any case, it was felt the participants would easily recognize that the study's potential benefit outweighs any possible physical, emotional, or psychological risk.

Justice. Justice in research can be considered the appropriateness of the population to be sampled and measured (Cozby, 2001). Moreover, it is necessary to consider how closely the research population represents the population to be studied. Justice requires that the benefits and burdens of research be distributed in an equitable manner. The principle of justice is that subjects should not be chosen simply because they are readily available or easy to manipulate. Data collection must be truly random and anticipated to include a range of those with little regard for the subject matter to those most willing to cooperate due to a perceived value to them.

The ethical tenet of justice in research was accommodated by the research activities because of the random, cross-sectional approach taken in soliciting survey respondents. It was assumed that some participants within the population would be well-versed on the benefits of business aviation; some would have had limited or no exposure to it at all; and some would be somewhere in between. The ethical principles of justice in

this research were assured because the researcher had no intent to control distribution of the survey in any way or to conduct the procedures so that they could result in manipulation of respondent selection.

Chapter 4: Findings

Overview

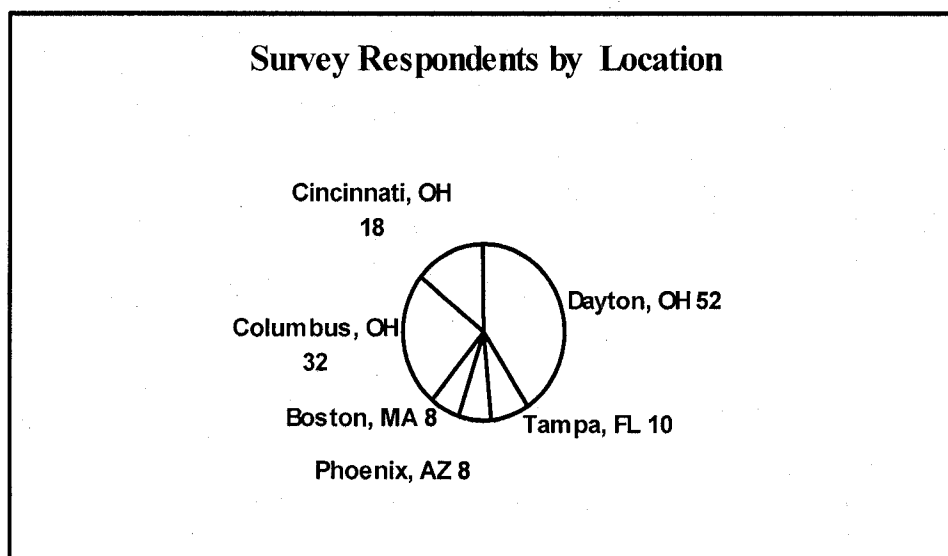
This chapter contains a description of the research data collected, analysis of these data, and a summary of key points. The chapter is organized in three sections. The first section presents the quantitative results from the administration of the research survey questionnaire. The second section provides an analysis and statistical interpretation of these results, and the last section summarizes main points that were developed.

The data collected by the survey questionnaire are presented in this section. The survey respondent demographics are presented first. These demographics include: the number of participants, their geographical locations, age groups, and years of management experience. These data are followed by the results of the survey: the participants' responses to the opinion-based questions. Comments by the survey respondents are provided last.

Respondent Demographics

One hundred twenty-eight respondents participated in this study. Figure 1 presents the number of respondents from each geographical location included in the study.

Figure 1. Survey respondents' geographical locations



As Figure 1 indicates, the survey respondents represented six metropolitan areas. The majority was located in Ohio with others in Massachusetts, Arizona, and Florida. The distribution of respondent locations provided a cross-section of respondents from large and medium-sized cities located in the Northern, South, Central, and Western United States.

Tables 4 and 5 present the age groups and years of management experience demographics reported by the survey participants. As indicated in Table 4, the number of respondents in each of the four managers' age groups was almost evenly distributed with only a 7% difference between the number of respondents in the youngest group of 21-29 (22%) and the number in the oldest group of 50+ (29%).

Table 4

Survey Respondents' Age Groups

<u>Age groups</u>	<u>21-29</u>	<u>30-39</u>	<u>40-49</u>	<u>50+</u>	<u>Total</u>
Respondents	28	33	38	29	128
Percent	22	26	29	23	100

The majority (36%) of the respondents had 5 to 10 years of management experience (Table 5). Those with 11 to 20 years accounted for 31%. Managers with fewer than 5 years of experience (20%) and those over 21 years accounted for the remaining 33%.

Table 5

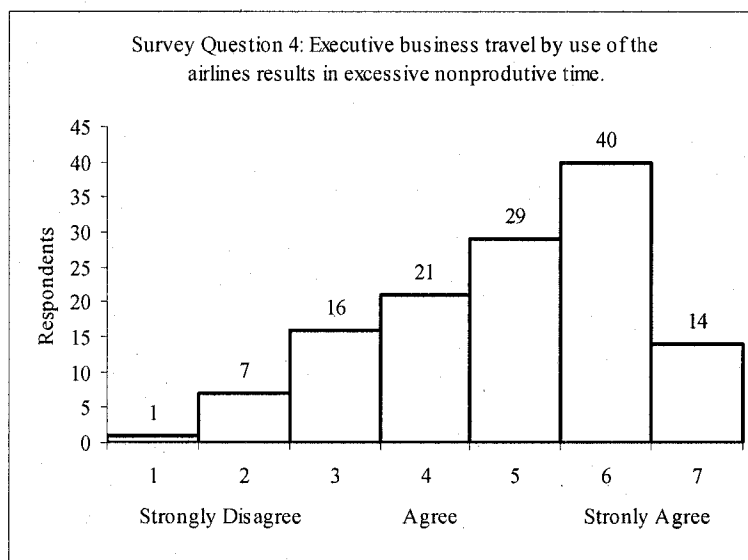
Survey Respondents' Years of Management Experience

<u>Years experience</u>	<u>Less than 5</u>	<u>5-10</u>	<u>11-20</u>	<u>21-30</u>	<u>31+</u>	<u>Total</u>
Respondents	26	46	39	12	5	128
Percent	20	36	31	9	4	100

Survey Opinion Questions

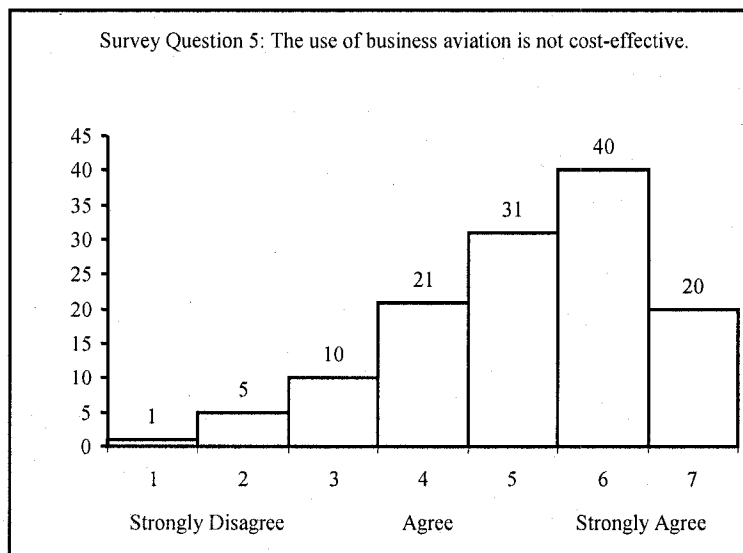
This section provides the research findings pertaining to the respondents' opinions regarding executive travel and business aviation. In each survey question, the respondents identified their level of agreement or disagreement to a statement by circling a corresponding number on a Likert-type scale with a range of 1 (strong disagreement) through 7 (strong agreement). Figure 2 presents the quantified results of Question 4.

Figure 2. Survey question 4 results



The results of Question 4 had a mean response value of 4.92 and a standard deviation of 1.42. Eighty-one percent of the respondents indicated they agreed or strongly agreed that executive business travel by use of the commercial airlines results in excessive nonproductive time. Sixteen (13%) of the respondents indicated some disagreement by choosing a response value of 3, and eight (6%) of the respondents indicated strong disagreement.

Figure 3. Survey question 5 results.



The results of survey Question 5 (Figure 3) had a mean response value of 5.19 and a standard deviation of 1.35. Eighty-seven percent of the participants agreed or strongly agreed that executive business travel by use of the commercial airlines can save time, but that it is not cost-effective. Ten respondents (7%) chose an opinion value of 3 indicating they somewhat disagreed, and 6 respondents (4%) strongly disagreed.

Figure 4. Survey question 6 results.

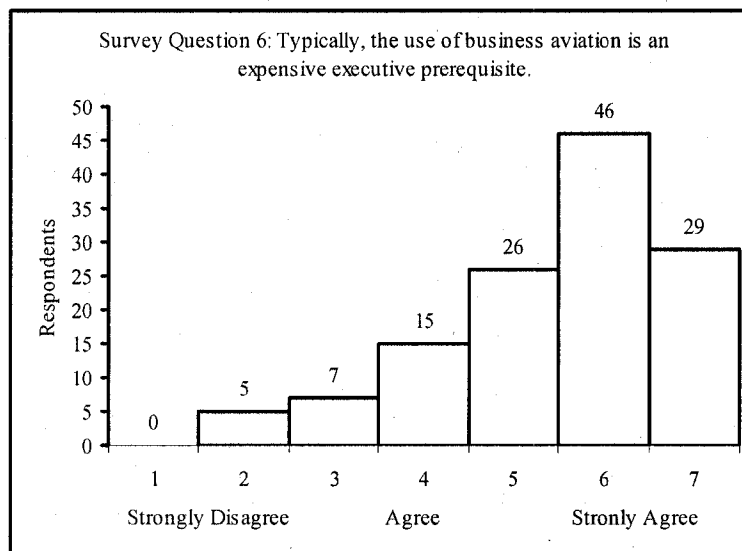


Figure 4 plots the results of survey Question 6. The mean opinion response value was 5.44, with a standard deviation of 1.79. Ninety-one percent of the survey participants agreed or strongly agreed that the use of business aviation is merely an expensive executive prerequisite. Only 12 (9%) of the respondents disagreed to some extent, and no responses indicated strong disagreement.

Survey Respondents Comments

The respondents wrote the following comments on the survey questionnaire:

- a. Business aviation is cost-effective when the reason for travel is important enough.
- b. Corporations should invest more in video conferencing. This would push the VTC technology to be better.
- c. Corporations should invest more in secure remote control software. This would decrease the need for field service travel.

- d. Companies that use private jets or yachts are wasting money that could be invested more wisely.
- e. My company uses business aircraft, but its usage is primarily for senior executives. However, in cases where multiple meeting attendees are required business aircraft have been made available.
- f. Corporate air travel is more effective when shuttling employee groups of upper management. I feel executives' traveling via business aircraft is a convenience for them and not a necessity.

Evaluation and Analysis of Results

Summary of Results

One hundred twenty-eight survey respondents representing six metropolitan areas within the United States participated in this study. The four age groups of the participants contained almost the same number of individuals providing a well-balanced distribution. The respondent's years of management experience were not as evenly dispersed. The 5- to 20 years of experience range included 67% of those surveyed. The remaining 33% had fewer than 5 years (20%) or more than 20 years (13%) of experience. These demographics were considered a typical representation of management experience levels because the majority of managers can be expected to be mid-level. In consideration of these factors, the age and experience demographics of the survey respondents were considered appropriate for the purpose of this study.

Statistical Analyses

An initial objective of this research was to assess managers' perceptions of problems associated with executive travel in the commercial airline environment. More specifically, this study sought to determine if managers feel executives experience

excessive nonproductive time when the airlines are used for business travel. Hypothesis H_{10} was developed for this purpose. In its null form: Managers do not believe executive travel using the airlines results in excessive executive nonproductive time.

In order to investigate this topic, the first survey opinion question asked the study participants how strongly they felt executive travel by use of the commercial airlines results in excessive nonproductive executive time. A mean response of 4.92 was obtained indicating that survey respondents perceived the use of the commercial airlines as inefficient for executive travel. This result alone does not support acceptance of hypothesis H_{10} . To test this hypothesis, a one-sample z-test was conducted.

The one-sample z-test was chosen for this evaluation because of its robustness when the sample size is greater than 30 and the population standard deviation is not known (Lind, Marchal, & Wathen, 2003). This test can also accommodate the non-normal population distributions that may exist in this study due to the diversity of business types and business sizes, and the various executive income levels throughout the United States.

The z-test was conducted for hypothesis H_{10} , H_{20} , and H_{30} based on the survey sample results supporting the theoretical assumption the population's mean was at least 4.00 (agree). A one-tailed test with $\alpha = .05$ was applied. The hypothesis rejection criteria were that if the p-value calculated is less than that of α , the null hypothesis would be rejected. Table 6 presents these test data and results for H_{10} .

Table 6

Descriptive Statistics and z-test on Executive Airline Travel and Nonproductive Time

Statistic	Sample Mean	Sample SD	Theoretical Mean	Difference	z Statistic	d
Value	4.92	1.42	4.00	.92	7.36*	.65

*p < .05

A p-value of .0001 was calculated with the Table 6 data using an electronic statistics template. The low p-value is statistically significant and reason to reject the null hypothesis that managers do not feel executive travel by use of the airlines consumes excessive nonproductive time. Furthermore, this p-value also assured the unlikelihood of a Type I error in rejecting the null hypothesis if it were true. Statistical effect size was determined by dividing the difference by the SD, which provided a value of .65. As explained by Cohen (1988), the effect size indicates the importance of the difference, and a value over $d = .50$ is considered to be large. Therefore, it was reasonable to accept that managers believe the use of the commercial airlines results in excessive nonproductive executive time.

The results of survey Question 5 were used to assess H_{20} if managers believe business aviation is a cost-effective alternative to the use of the commercial airlines. The test parameters and decision criteria used in the previous results tested were applied to this test. These test parameters for H_{20} are illustrated in Table 7.

Table 7

Descriptive Statistics and z-test on Business Aviation as a Cost-Effective Alternative

Statistic	Sample Mean	Sample SD	Theoretical Mean	Difference	z Statistic	d
Value	5.19	1.35	4.00	1.19	9.90*	.88

*p < .05

A p-value of .0001 was calculated using the Table 7 data. H₂₀ was rejected by the z-test and provided evidence that managers typically feel the use of business aviation is not a cost-effective alternative to the airlines for executive travel requirements. The effect size of .88 is considered large and further supports rejection of H₂₀.

The last survey opinion question was designed to determine managers' perception in regard to the use of business aviation as being no more than an expensive executive perquisite. This question was intended to provide data for the purpose of assessing the degree to which managers' stereotype business aviation as a luxury rather than a potentially cost-effective management tool. Research by Agur (2000) agreed with the findings of a study J. D. Power and Associates ("Utilization Strategies," n.d.) confirming that managers do not believe business aviation can be economically justified. An additional study conducted by Olcott (2005) revealed that many corporate managers preferred to evade the subject of business aviation altogether, rather than to accept the challenge of convincing stakeholders of its potential advantages. A common thread in these studies has been the wide-spread management stereotyping of business aviation as an expensive executive perquisite that most companies believe they cannot logically afford. However, these studies concentrated on selected companies and management

levels. No attempt was made to collect data for the purpose of assessing the attitude of managers in general within the United States.

H₃₀ asserted managers do not believe business aviation is an expensive executive perquisite. The results of the survey data and z test parameters are presented in Table 8.

Table 8

Descriptive Statistics and z-test on Business Aviation Cost-Effectiveness versus Executive Perquisite

Statistic	Sample Mean	Sample SD	Sample Mean	Theoretical Difference	z Statistic	d
Value	5.44	1.79	4.00	1.44	9.90*	.80

*p < .05

The z test for survey Question 6 results was conducted using the identical approach and decision criteria that were applied to the two previous survey opinion questions. The test results were significant and rejected the hypothesis, as indicated by a p-value calculation of .0001, that manager's believe business aviation is an expensive executive perquisite. The effect size of .80 is large. Thus, the statistical inference developed by this analysis is that managers generally believe the use of business aviation is an expensive executive perquisite and not a cost-effective management tool.

The next assessment was intended to determine if managers' perception concerning the cost-effectiveness of business aviation significantly differ between age groups. H₄₀ took the position that no difference exists between the age groups of managers regarding their opinions about the cost-effectiveness of business aviation. An ANOVA was conducted to test this theory, using age groups identified in the survey and the responses to survey Question 5, which asked how strongly the respondent believed

business aviation is not cost-effective. Table 9 summarizes the survey data collection results.

Table 9

Age Groups and Mean Response to Survey Question 5.

Age group	<u>21 - 29</u>	<u>30 - 39</u>	<u>40 - 49</u>	<u>50+</u>	<u>Total</u>
Number of respondents	28	33	38	29	128
Mean response	4.75	4.51	5.21	4.82	

Table 10 presents the ANOVA statistical data results. The hypothesis test was accomplished using F-statistics as the decision criterion. The rule applied was that if the F-value exceeds the $F_{critical}$ value, the null hypothesis is rejected. The F-value calculated was 1.09, which did not exceed the $F_{critical}$ value of 2.67; therefore, this test data failed to reject the null hypothesis. The Tukey pairwise comparison test using a studentized range distribution ($q_{\alpha critical}$) of 3.63 for r and n - r degrees of freedom at $\alpha = .05$ also failed to support a statistically significant variance among the means of the four managers' age groups. Therefore, it is accepted that respondents' age had no effect on their opinions regarding the cost-effectiveness of business aviation.

Table 10

ANOVA Statistical Results

Test statistic	<u>df</u>	<u>F</u>	<u>F_{critical}</u>	<u>p-value</u>	<u>α</u>	<u>Tukey pairwise</u>
Value	127	1.09	2.67	.35	.05	none detected

A Pearson r correlation analysis was conducted to determine if a relationship existed between years of management experience and strength of opinion that business aviation is merely an expensive executive perquisite. The correlation analysis used the survey respondents' years of management experience as the independent variable, and their opinion values from survey Question 6 as the dependent variable. H_{50} stated: No correlation exists between years of management experience and the perception of business aviation as being only an expensive executive perquisite. Table 11 presents the correlation data results.

Table 11

Pearson r Correlation Statistical Data

Test statistic	<u>r = Coefficient of correlation</u>	<u>r² = Coefficient of determination</u>
Value	0.01	0.0002

Vogt (1993) has established that correlation coefficients above 0.70 are strong, 0.30 to 0.70 are moderate, less than 0.30 is weak, and a value close to ± 0.0 is reason to believe no correlation exists. The r-value of 0.01 found by this research indicated there is

no relationship between managers' years of experience and their opinion of business aviation being an expensive executive perquisite. Additionally, the coefficient of determination (r^2) of .0002, as a relative measure of how well the regression line fit the data, also reinforced that no relationship existed. Thus, this assessment failed to reject the null hypothesis that no correlation exists.

Further, in order to reject the potential claim that these results were possibly obtained by chance, the t-test procedures recommended by Lind, Marchal and Wathen (2003) were applied. This application is expressed as $t = r\sqrt{n-2} / \sqrt{1-r^2}$ using a two-tailed test with two degrees of freedom and $\alpha = .05$. For this study, a t_{critical} value of 1.96 was identified. The decision criterion used for the hypothesis test was that if the t statistics calculated did not exceed ± 1.96 , it would fail to reject the null hypothesis and provide 95% confidence in the results. Moreover, the results would be expected to have occurred by chance no more than once in twenty trials. The calculated t_{critical} value was 1.43. Therefore, this evidence failed to reject H_{50} . It can be assumed that no linear relationship existed between years of management experience and the opinion that business aviation is no more than an expensive executive perquisite.

Summary

This chapter presented the quantitative results of the research data collection and a discussion of the analyses utilizing these findings. Descriptive statistics were used to evaluate the survey respondents' opinions concerning the extent to which they believed the use of commercial airlines results in excessive nonproductive executive time, and their attitudes toward business aviation as a potential cost-effective alternative. Furthermore, the data established how strongly the respondents believed business aviation is no more than an expensive executive perquisite.

The statistical evaluation of the research hypotheses, significance of these results, and the effect size provided substantial evidence that managers believe the use of the airlines for executive travel consumes excessive time, but they do not perceive business aviation as a cost-effective alternative. The findings also revealed the lack of a significant statistical variance in this opinion based on the age of the managers. Additionally, no relationship was found between years of management experience and the opinion that business aviation is no more than an expensive executive perquisite.

Chapter 5: Summary, Conclusions and Recommendations

Summary

Studies conducted by DeFrank, Konopaske and Ivancevich (2000) at the turn of the 21st century established that the need for executives to travel in a fast-paced business environment has never been greater, and the use of the commercial airlines in this deregulated era often results in excessive and costly nonproductive time. The events of September 11, 2001, and continuous air travel safety and security issues thereafter, have burdened the traveling executive with additional nonproductive time. Such experts as Karlgard (2005) do not expect this situation to change in the foreseeable future. Considering these factors, a greater interest in the use of private business aviation for executive travel would be expected; however, this has not been the case.

A review of relevant literature by aviation analysts Castro (1995), Kovach (2000) and Sharkey (2006) provided substantial evidence that business aviation programs can be a cost-effective alternative to airline travel in many cases, and companies that recognize this fact have a competitive advantage. Nevertheless, according to Sharkey (2006), relatively few corporations use business aviation to their benefit. Olcott (2005), Krane (1999), and others conjecture that a major reason for this phenomenon is that manager's perceive business aviation to be no more than an expensive executive perquisite. However, no studies have been accomplished to verify this claim.

The study conducted assessed the extent to which managers in the United States perceive business aviation as merely an executive perquisite, and identified whether the demographics of age and years of experience of the surveyed managers are associated with perception. With this information, business aviation advocates (e.g. the NBAA,

corporate leadership and travel managers) could identify target management sectors for intervention measures that would provide the most beneficial outcomes.

The research design utilized a survey instrument to gather demographic and opinion data from a cross-section of company managers from various locations within the United States. The findings were compiled and analyzed using descriptive statistics, ANOVA and Pearson r correlation analysis to provide statistical data for testing the hypotheses and evaluating the research questions.

The study found support for business aviation analysts' assertion that only a small number of company managers acknowledged the potential cost-effectiveness of business aviation use. Strong agreement was found among managers that business aviation is no more than an expensive executive perquisite. Further, no relationships could be established between the age or years of experience of the managers and this opinion. The following conclusions and recommendations are based on the results of this study.

Conclusions

The primary objective of this study was to answer five research questions pertaining to managers' stereotype of business aviation and the potential loss of executive productivity and competitiveness that may result. Each research question, the corresponding hypothesis, and associated conclusions that were developed are presented in this section.

Research Question 1: To what extent do managers believe executive travel using the commercial airlines results in excessive executive nonproductive time?

H_{10} = Managers do not believe that executive travel using the airlines results in excessive executive nonproductive time.

The first research hypothesis was developed to assess if companies typically experience a loss of executive productivity by using commercial airlines. Analysis of the data collected rejected H_{10} . A strong statistical inference was found that managers believe the use of the commercial airlines for executive travel results in excessive nonproductive time. Only a small percentage of disagreement was evident among managers from the six metropolitan areas surveyed. This indicates a widespread extent of this opinion throughout American companies. This conclusion adequately answered the research question. Additional conclusions formulated were in agreement with the findings of Sharkey (2006), who asserted that the relatively small number of companies utilizing business aviation today is evidence that a majority of managers have placed themselves in a submissive role. Moreover, managers apparently accept the inefficiencies of airline service today, without considering business aviation as a potentially cost-effective alternative.

Research Question 2: Do managers' believe business aviation is not a cost-effective alternative to executive travel by the commercial airlines?

H_{20} = Managers do not believe business aviation is a cost-effective alternative to use of the airlines.

The study revealed managers believe the use of business aviation is not cost-effective. Analysis of the research findings statistically failed to reject H_{20} . Therefore, it was concluded that managers believe business aviation is not a cost-effective alternative to executive travel on the commercial airlines. This conclusion supports Krane's (1999) position that managers do not have adequate knowledge of contemporary business

aviation studies and NBAA information that confirms the cost-effectiveness of business aviation.

Research Question 3: Do managers' believe that business aviation is no more than an executive perquisite, and not a cost-effective management tool?

H₃₀ = Managers do not believe business aviation is an expensive executive perquisite.

Hypothesis H₃₀ was designed to examine the claim of aviation analysts (e.g. Sharkey, 2006) that only a relatively small number of companies have learned to use business aviation to their advantage. Moreover, its purpose was to demonstrate that most managers perceive business aviation as no more than an expensive executive perquisite. H₃₀ was based on the premise that today's business world constantly strives to reduce cost and to increase productivity, and managers have access to vast amounts of information to assist them in doing so. It would then be reasonable to expect managers to be aware of studies and documentation that show the potential benefits of business aviation use. However, the results of this study did not support this expectation, and H₃₀ was statistically rejected. Conversely, managers were found to believe the use of business aviation is no more than an executive perquisite. This finding supports the assertion of such business aviation analysts as Castro (1995) that managers are not skilled in measuring the true value of executive time or in accurately assessing the potential benefits of business aviation. It can be concluded that a majority of managers consider business aviation to be a lavish and unnecessary expense. This opinion may be a significant barrier to achieving optimum corporate efficiency.

Research Question 4: What difference in opinion, if any, exists between managers' age groups regarding the cost-effectiveness of business aviation?

H_{40} = No difference exists between managers' age groups regarding their perception of the cost-effectiveness of business aviation.

The fourth hypothesis focused on determining whether managers' age groups have a bearing on the opinion that business aviation is not cost-effective. The research question was developed to investigate the assertion of business aviation analysts (e.g. Olcott, 2005) that managers stereotype business aviation because of their exposure to earlier eras when executive jets were a token of corporate wealth and used by only a small elite population of highly paid executives or famous people. Thus, it would be expected that older managers would show more bias against the use of business aviation. The results of the ANOVA conducted failed to reject H_{40} . No significant difference in the opinion of managers among different age groups was evident. Therefore, this study concluded that managers' age has no bearing on their opinions about the cost-effectiveness of business aviation.

Research Question 5: What relationship, if any, exists between years of management experience and the perception of business aviation as only an expensive executive perquisite?

H_{50} = No difference exists between years of management experience and the perception of business aviation as being only an expensive executive perquisite.

Research Question 5 was answered by determining if years of management experience correlated with a manager's opinion of business aviation as being only an expensive executive perquisite. The assertion of this investigation was that if a

correlation existed, it would provide an indication of the level of management experience that is most responsible for stereotyping business aviation. In essence, do new managers have a different opinion than more experienced managers? However, the results of the Pearson r correlation analysis indicated there is no relationship in managers' opinion based on years of management experience. These results failed to reject H_{50} . Thus, it can be concluded that no relationship exists between how long a person has been in a management position and the perception that business aviation is no more than an expensive executive perquisite.

Strong statistical inference was found that managers believe executive travel by use of the commercial airlines results in excessive nonproductive time. However, the widespread and strong management opinion is that the use of business aviation is not a cost-effective alternative to executive travel by the commercial airlines. Additionally, no significant difference exists between managers' opinions of business aviation based on age, and no linear relationship was evident between years of management experience and opinion. The results of this study indicate that managers throughout the United States, at all ages and experience levels of management, generally perceive business aviation is not a cost-effective alternative to airline travel, and no more than an expensive executive perquisite. One goal of this study was to identify where intervention may be most effective in assisting managers to become more knowledgeable about business aviation, but the conclusions developed by this study do not provide such information. Instead, the findings indicate there is a need for business aviation promotional activities on a broad scope.

Recommendations

Castro (1995) asserted that a major cause of poor decisions in the competitive business world is stereotyping of services and products during the decision making process. He emphasizes that for businesses to maximize profitability, managers must analyze business decisions with factual and practical approaches rather than with personal perception. In regard to management decisions concerning the use of business aviation in place of the commercial airlines for executive travel, the following three recommendations are provided.

Recommendation 1

Corporations that regularly use the commercial airlines for executive travel should conduct an objective in-house travel analysis to determine if the use of business aviation would be beneficial. This analysis should begin by gathering company travel expense report data from the past one to three years. The data collected should include travel origins and destinations, number of trips and travelers, and the total cost of travel (i.e. all expenses and the value of executive nonproductive time). These data should be compiled and used to develop a matrix to illustrate the company's typical travel pattern and real cost. The assistance of a business aviation consultant should then be used to perform simulations of the same travel requirements using business aviation in lieu of the commercial airlines. Cost comparisons of typical company trips could identify where cost-savings and greater efficiency could be achieved by use of business aviation.

Recommendation 2

It is recommended that such organizations as the NBAA and business aviation operators place higher priority on the development of methods to assist companies in assessing the value of the intangible benefits of business aviation. As described by Castro

(1995), companies have great difficulty making accurate assessments in this area.

Intangible benefits may include more time at home and rest for executives; potential corporate ability to respond quickly to new market opportunities; attraction and retention of key employees; safety and security of personnel and corporate sensitive information; and customer service satisfaction. The intangibles and their value may vary from company to company, but many apply to all corporations.

To assist in the assessment of intangibles, business aviation organizations should develop generic surveys that can be tailored to indicate the worth of intangibles to corporations' traveling executives and customers. The data collected could be used to rank order intangibles in terms of importance regarding improved efficiency and profitability. While perhaps no way exists to correlate the value of intangibles directly to absolute dollar amounts, some relative level of expected increased performance could be translated to a value. This value should be taken into consideration as part of cost-benefit analyses during the process of deciding if business aviation is a potential corporate asset.

Recommendation 3

An additional recommendation is for city chamber of commerce groups to take an active role as stakeholders in promoting the use of business aviation as an enhancement to their local economy. They could conduct research to identify local companies (i.e. product and service companies that operate in broad sales areas and diverse markets) that could benefit by the use of business aviation. With the assistance of business aviation consultants or perhaps local business aviation service providers, a business aviation overview should be developed for presentation to corporate travel managers and senior leaders. The objective of the overview would be to acquaint the companies with the

potential benefits of business aviation and to offer assistance to them in conducting a corporate-specific study to determine the benefits business aviation may provide to them.

Recommendation 4

It is recommended future research in this field of study investigate the possibility there is a difference of perception concerning the cost-effectiveness of business aviation among management levels. This approach may provide evidence a particular level of management is responsible for influencing the perception of business aviation within corporations. The variables may be collected and measured by utilizing a demographic survey question that asks respondents to identify their management level as: lower or line level, mid level, or senior level. These data may provide new knowledge pertaining to perception of business aviation when based on the stratification of management levels.

A study of this nature concerning business aviation has not been accomplished in the past. The findings, conclusions, and recommendations developed may be of value to business aviation organizations. In order to provide awareness and access to this study, copies of the dissertation abstract will be provided to the NBAA, ProQuest Database, *Business Aviation Magazine*, and Embry-Riddle Aeronautical University. At their discretion, proper protocol can be used to obtain the complete study from the Northcentral University Dissertation Library.

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APPENDIX A
INFORMED CONSENT FORM

Informed Consent Form

Dear Sir or Madam:

You are being asked to participate in a doctoral research study. If you agree to participate, please read the informed consent information below and complete the acknowledgement section at the end. Then complete the attached survey and return it with this form to the researcher. If you received this material by mail, a self-addressed and stamped envelope is enclosed.

Subject of Study: The Cost Effectiveness of Business Aviation.

Purpose: You are being asked to participate voluntarily in this research study concerning the perception of managers regarding the use of business aviation as a cost-effective management tool or merely an expensive executive perquisite. The attached survey solicits your opinion only, and no further contact of any nature will be made.

Participation Requirements: Your participation requires only a few minutes to complete the attached survey. You will receive no further requests from the researcher.

Procedures: Please complete the Acknowledgment Section at the bottom of this form and then the attached survey, per the instructions provided within it. Then return it to the researcher. If you received this material by mail, a self-addressed stamped envelope has been provided for this purpose.

Potential Risks/Discomfort: No known personal risk or discomfort is involved by your participation in this study.

Potential Benefits of this Research: There are no direct benefits to participants of this study, and no incentive is offered for participation. However, the objective of the research is to provide a body of knowledge concerning managers' opinion of the cost-effectiveness of business aviation. The findings may provide evidence of how awareness and training could result in improved profitability in many industries.

Anonymity /Confidentiality: The data collected by this survey are strictly confidential and will not be used for any other purpose. All results will be presented in aggregate statistical format, and individual participants will not be distinguished in any way.

Right to Withdraw: Participation in this survey is completely voluntary. If for any reason you believe this survey presents a personal conflict of interest or approaches sensitive personal issues, or if you do not feel qualified to participate, you may withdraw at any time by simply discarding this material.

Contact Point for Questions: Please direct any questions to Thomas Brown, 1940 Forest Dell Drive, Beavercreek, OH 45434; telephone (937) 427-1424; or e-mail Thomas.brown@ameritech.net

Request for Results of Statistical Data: If you would like a copy of the statistical results of this study, please use the above contact point, and a copy will be provided to the address you specify.

Acknowledgement: I have read and understand the above conditions of my participation in this study. My signature below indicates my acceptance of voluntary participation in this study.

Participant's Name: _____ Researcher's Name: Thomas Brown

Signature _____ Signature _____

Date _____ Date _____

APPENDIX B
SURVEY INSTRUMENT

Research Survey

Part 1. Demographic Information

For Questions 1 and 2, place a check mark in the space that applies to you.

1. What is your age group?

21 - 29 _____

30 - 39 _____

40 - 49 _____

50 + _____

2. Do you work in any capacity within the commercial airlines or in the business aviation community?

Yes _____

No _____

For Question 3, indicate in the block provided your number of years of management experience.

3. I have a total of years of management experience.

Part 2. Opinion Information

For the remainder of the survey questions, *business aviation* is defined as any form of private air transportation including air charter, air taxis, aircraft leasing, aircraft fractional ownership, and any other method of utilizing business aviation services. Commercial airlines are defined as the scheduled air carriers operating in the United States.

For Questions 4 through 6 please circle the number that best describes your opinion according to the following legend.

Strongly Disagree			Neutral			Strongly Agree
1	2	3	4	5	6	7

4. Business travel by the commercial airlines results in excessive executive non-productive time.

1 2 3 4 5 6 7

5. The use of business aviation is not cost-effective.

1 2 3 4 5 6 7

6. Typically, the use of business aviation is an expensive executive perquisite.

1 2 3 4 5 6 7

Please feel free to provide any comments you may have pertaining to the subject matter of this survey.
