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CHARTER AIRLINE ECONOMIC ANALYSIS FOR NELSON MANDELA METROPOLITAN AREA – PRELIMINARY ANALYSIS

By

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Abstract

Tourism is an important revenue generating industry within South Africa. South Africa is currently attracting less than 1% of the global tourism market and only 3% of the overseas long-haul tourism market. The majority of all foreign visitors who arrive by air in South Africa land at Johannesburg International Airport and most will never reach Eastern Cape. Thus the main problem facing growth of tourism to Port Elizabeth and surrounding region is the accessibility of the area by tourists.

The main objective of the research is to test the viability of establishing a charter airline company based in Port Elizabeth using a cost-benefit analysis. The second objective will be identifying the existence of market failure based on the results of the cost-benefit analysis. Once the existence of market failure is identified a future step will be to present ways of rectifying such failure. A supply/ demand analysis will also be presented as part of assessing and anticipating future changes in the market.

A review based on the supply/demand analysis, cost-benefit analysis and market failure assessment will be presented. Also options will be identified and put forward regarding the structure of an appropriate airline company will be put forward.

The project undertaken will be very useful in assessing the scope for promoting tourism in Port Elizabeth and surrounding area through the development of a charter airline operation based in the city

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General definition tourism and travel, scheduled vs. Charter airline transport

According to the World Tourism Organization (2003) tourism comprises the activities of persons traveling to and staying in places outside their usual environment for no more than one consecutive year for leisure, business and other purposes not related to the exercise of an activity remunerated from within the place visited. Travel is a different concept from tourism, as not all travel is tourism. There are three criteria that must be met in order for a trip to be included in tourism WTO (2003). These criteria are:

- The concept of displacement involves displacement outside the usual environment
- The travel must occur for any purpose different from being remunerated from within the place visited
- Only the maximum duration is mentioned and not the minimal

Air transport has contributed to the development of tourism markets, which are not accessible via road or sea. There are two types of airlines when concerning passenger transport: scheduled and non-scheduled/charter airlines

Scheduled airlines fly on agreed and published routes irrespective of the load factor i.e. they do not require full passenger capacity in order to operate. The routes are a result of agreements between countries. (Bennett, 2000: 60)

An alternative to scheduled/regular air carriers is the non-scheduled/charter airlines. The advantage of charter airlines resides the fact that they fly on routes where they can generate high load factors, between 85% and 90% (Bennett, 2000:61). Because of the way they operate, charter airlines are well adapted to fluctuations of demand in time of crises.

Every airline has a break-even load factor. As defined by (Air Transport Association, 2003), the break-even load factor is the percentage of the seats the airline has in service that it must sell at a given yield, or price level, in order to cover costs. Break-even load factors vary with airlines. Scheduled routes charge a higher tariff but operate on a lower load factor compared to charter flights where a lower unit cost is charged but a higher load factor is needed to yield a profit. Load factor is calculated by using the formula: Average Load *100/ Peak load (Page, Brunt, Busby & Connell, 2001:107). Escalating costs push up the break-even load factor, while increasing prices for airline services have the opposite effect. Airlines, typically, operate very close to break-even load factor.

Motivation for undertaking the research

In order to understand the motivation behind the research a background of tourism in South Africa and Port Elizabeth in particular must be presented

Tourism is an important revenue generating industry within South Africa. A World Travel and Tourism Council study estimated that the travel and tourism industry in South Africa was worth R 16 982 billion per year in 2000 (Bennett 2000:358). After taking into account the multiplier effect the figure rises to R 69 758 billion. The income generated by the tourism industry hovers around 6% of the GDP, which falls short of the goal set by the White Paper on Tourism of 8% of the GDP for the year 2000. The benefits from tourism are not spread evenly among South Africa's provinces. Eastern Cape seems to be one such case which fails to maximize the revenues and hence the benefits to the economy despite its great potential.

Recently, there has been a sharp decrease in the number of airlines flying to South Africa and as a result shortages of seats have been developed at certain times. For example during June 2001 and July 2001 there was an estimated shortage of about 4500 seats a week between South Africa and the main cities in Western Europe. The reason for such a constant shortage is the reduction of the number of airlines arriving to South Africa. The collapse of South African Rand against the major currencies has affected airlines profitability, reducing the number of flights. (Innocenti, Business Day 07.08.2001) As a result the continue increase in demand has led to a sharp increase in ticket prices.

The figures below show that in successful development of new tourism destinations the airline has been a key feature:

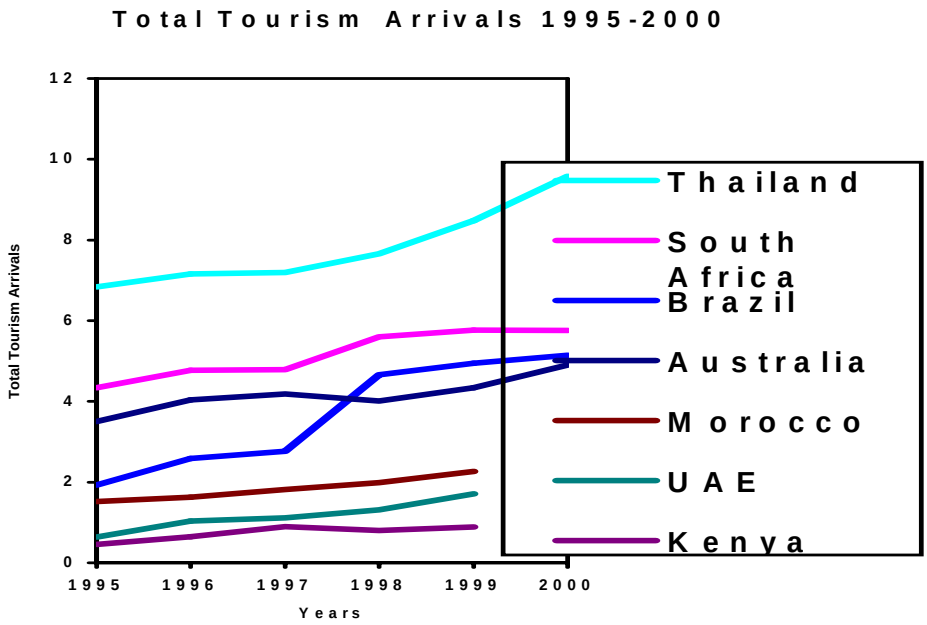

Figure 1

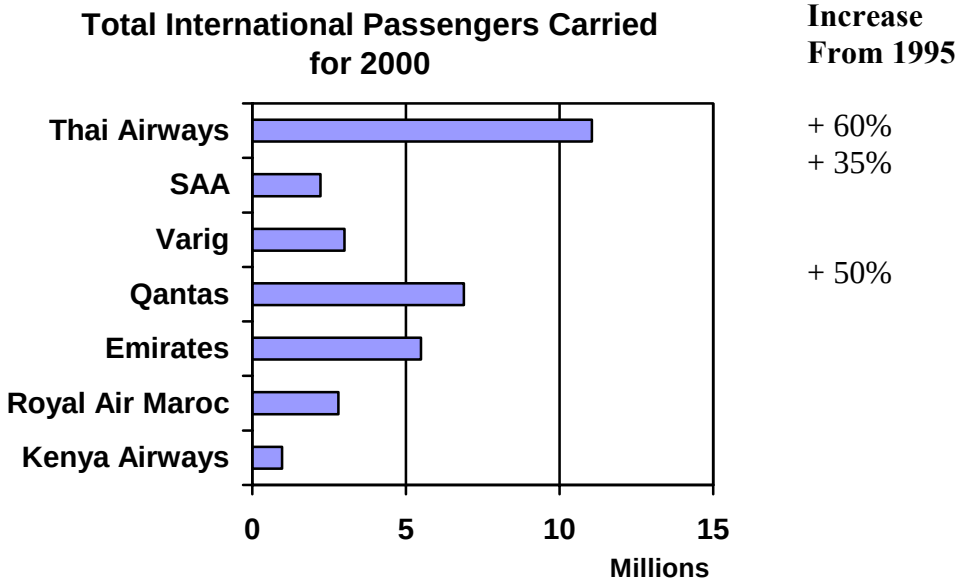

Figure 2

As shown by (Becherel& Vellas 1995:121), the economic analysis of passenger traffic proves that there is high price elasticity for leisure travel demand and low price elasticity for business and to some extent personal travel demand.

South Africa is currently attracting less than 1% of the global tourism market and only 3% of the overseas long-haul tourism market. The majority, 77% of all foreign visitors who arrive by air in South Africa land at Johannesburg International Airport and most will never reach the Eastern Cape, mainly because of the additional need to purchase a domestic air ticket. Thus the main problem facing growth of tourism to the Nelson Mandela Metropolitan Area is the accessibility of the area by tourists.

Current trends in airline travel arrangements confirm that foreign arrivals to South Africa fall into one of four categories:

1. Independent travelers who book airfare, accommodation, coach tours and food each separately.
2. A package where airfare and accommodation is included.
3. A full package where airfare, accommodation and food is included.
4. An inclusive package where airfare, accommodation, coach tours and food are all included in a bulk price discount.

The latest report released by SA Tourism (2002), confirms that 62% of foreign tourist arrivals to South Africa are independent, 10% are package, 4% are full package and 24% are inclusive package. This

means that there is much scope for increasing inclusive package tours by offering charter airline discounts.

An increase in foreign tourism to the Nelson Mandela Metropolitan Area will be a large source of revenue for the local economy. Nelson Mandela Metropole has been chosen as the area object of research at the suggestion of Mr. Peter Myles, Director of the Centre for Tourism Studies at U.P.E. The research will concentrate on supply led tourism growth as in the case of initiative undertaken by TUI in establishing a charter airline company in Dominican Republic.

The main area considered from a tourist supply viewpoint will be Western Europe. The reasons for choosing the region are the relative closeness from a long haul transport perspective, the short distances between countries and also the climate when compared to South Africa. In addition 70% of the total foreign arrivals are from Europe.

A set route will be considered between a few of the main cities in Western and Northern Europe based on an analysis of market demand and present statistics regarding the countries from where the most tourists arrive to South Africa.

Objectives of the research

The main objective of the research is to test the viability of establishing a charter airline company based in Port Elizabeth using a cost benefit analysis.

The second objective will be identifying the existence of market failure based on the results of the cost benefit analysis. Attached to this objective will be addressing ways in correcting the market failure in case it is found.

Structure of research

The main methodology used will be market supply/demand analysis and cost benefit analysis. Application of experience from international case studies will be undertaken, in particular the project undertook on the Punta Cana airfield in the Dominican Republic.

A demand analysis will include an examination of the intended visitor markets of the destination, in this case The Nelson Mandela Metropole and the surrounding area. Travel patterns will be integrated in the research

From a supply perspective, an analysis of the destination itself with its accommodations, facilities and attractions needs to be examined. An inventory of the existing accommodations and their capacity to

handle the extra amount of tourists is necessary to be undertaken. Also a comprehensive list of the attractions that the region currently offers is considered. The last aspect to be taken into consideration from a supply stand is an examination of the support facilities and services such as: airport capacity, availability and quality of accommodations, dining, entertainment and shopping amenities, security and safety abilities including medical facilities. Figure number 3 below shows the structure to be followed by the research.

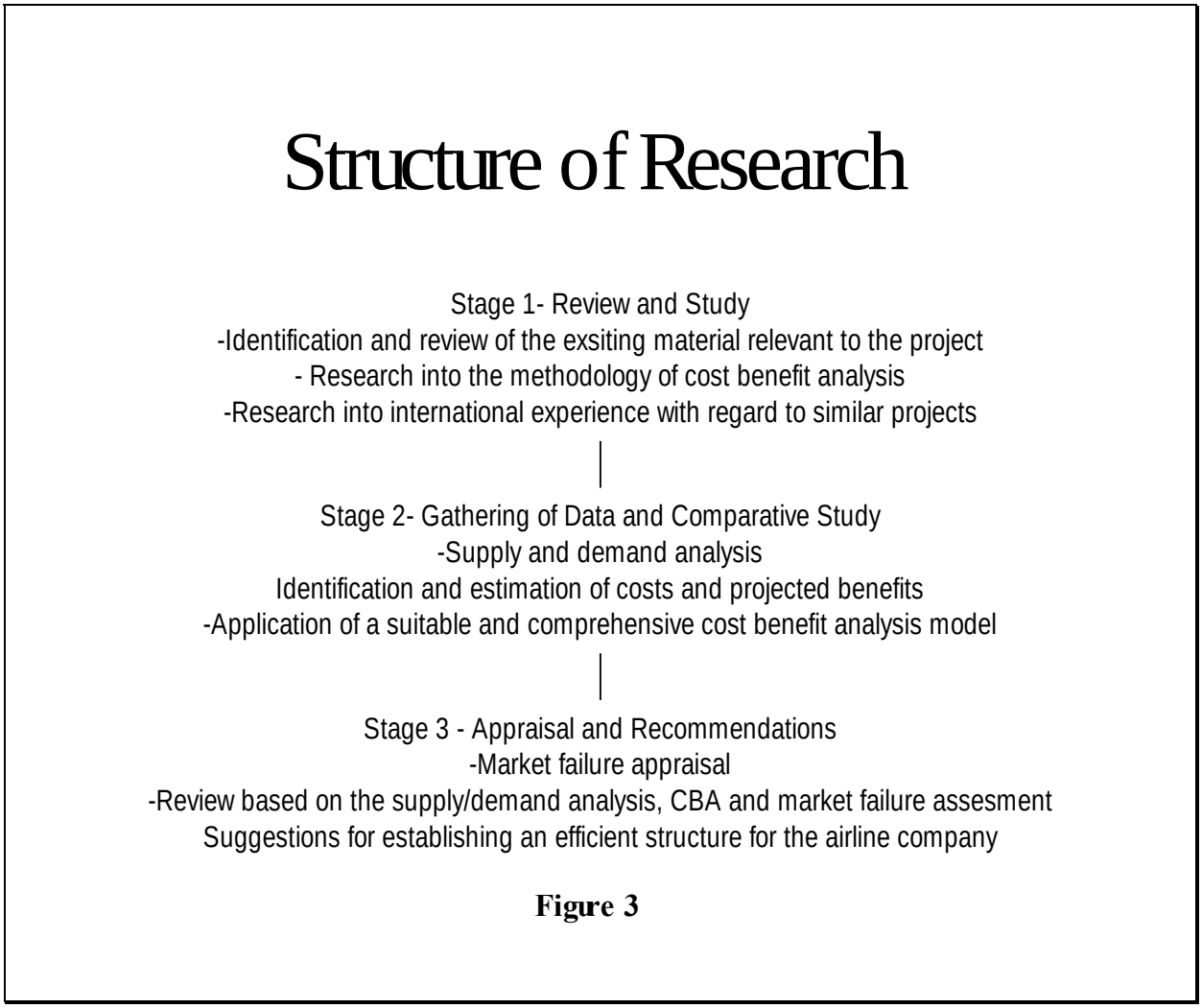

Figure 3

Review and study

The first step to be taken in this research will be the identification of material and documentation already existing in projects with similar scopes. This information will be used in order to lay a platform for the South African situation. Literature referring to cost benefit analysis methods will also be studied and reviewed.

According to the latest charter trends as shown by Myles (2002), tourists traveling on charter packages tend to remain in the same area with a 300 km radius. The same area will be covered by the analysis when looking at the projected benefits via the income multiplier. The length of the time for the project will be set at five years, for detailed coverage, with a broader look for a longer time frame. A longer analysis period will render less certain projections regarding costs and benefits.

Relevant literature, such as the case of successful establishment of a charter airline in Punta Cana airfield in the Dominican Republic will be studied. Parallels will be drawn between this situation and the Port Elizabeth one. The Punta Cana study consists of research done by the German travel operator TUI in collaboration with the Dominican government regarding the upgrading of a local airport in order to establish a charter airline.

In the Dominican Republic (DR) tourism is the number one service industry and in 1999 a total of 2,665,184 tourist arrivals were recorded, a 14.2% increase from 1998. In 1998, tourism contributed US$2.142 million to the DR economy. The Dominican Republic continues to be the leading Caribbean tourist destination with the largest number of hotel rooms. In 1998, the DR room stock stood at 42,412 and is growing. By comparison, the hotel room stock in the Eastern Cape currently stands at 10,000. Tourism continues to be a top priority for Dominican Republic.

The Ministry of Tourism in the Dominican Republic has determined five top priorities to promote tourism into 2001 and beyond:

1. To maintain cleanliness
2. Safety and order in all tourist areas within the country
3. To develop its cruise industry
4. To attract more commercial airlines
5. To embark on an aggressive marketing plan to grow into the US market and to reach out to new markets.

It was point number four that motivated hoteliers and stakeholders from private enterprise to form a company and invest in the development of a private airstrip to attract charter airlines.

TUI is the largest tour operator in Germany. TUI is also the first tour operator that has environmental management integrated into its business procedures. According to Dr. Ralph Corsten, TUI Chairman, “for TUI, an intact environment is the solid, indispensable basis for successful long-term existence of the company”. TUI has expressed considerable interest in the Eastern Cape Province as a tourist destination for their clients.

In 1998, TUI's turnover was DM8.5 billion (US$5 billion), their market share was 26.4% and they had 5 million clients. Between October 2002 and February 2003, the first Nordic package tours offered by Fritidsresegruppen, a TUI Nordic company arrived in Port Elizabeth. Over this period some 2500 Scandinavian tourists visited the area and this is expected to grow to 5000 in the next season (World Tourism Organization, 2002).

Gathering of data and comparative study

From a supply-demand situation there are two possible reasons, assumed by the proposal, for establishing a charter airline: 1) the current demand for visiting Eastern Cape is larger than the current supply of tourists, 2) the demand from a new market is not being served by current supply, there is an accessibility problem for tourists. A number of factors affecting supply and demand will have to be taken into consideration in order to anticipate future changes. These factors are:

- Tourism trends to the area for the past five years
- A look at the airline/s currently serving the market
- Regulatory environment regarding the air transport industry

The principal sources of demand should be specified along with other factors that affect it will be:

- Data concerning tourists: number of tourists, average length of stay, and average spending.
- Seasonality of demand
- Factors impacting on demand e.g. pricing, other products related to tourism
- Identifying links with other commercial or tourism products

In order to conduct an efficient cost benefit analysis the costs and projected benefits from such a project need to be analyzed. The comparison with the international case study will contribute to the assessment of a large number of costs. As shown by Becherel & Vellas (1995), the total operating costs of airline companies is made up of direct operating costs and indirect operating costs. A comparison between costs relating to the scheduled and charter airlines will be done.

The breakeven costs for the different types of airplanes will be considered. The two types of airplanes considered are the Airbus A340-300 and Boeing 767-300ER. The reason for choosing the two aircraft is their capability for long distance traveling and the availability in terms of leasing. The specifications of both airplanes are shown below.

Airbus A340-300

Manufacturer: Airbus Industrie (Europe)

Cruising Speed: 914 km/hr

Range: 14 400 km

Passenger capacity: 263-335

B 767-300ER

Manufacturer: Boeing

Cruising Speed: 861 km/hr

Range: 10 563 km

Passenger Capacity: 305

According to prices as at December 2002 the monthly lease rates in USD for the two models are:

B767 300ER	A340-300
New 470 000	New 650 000
5 yr. old 416 000	5 yr. old 572 000

The table below represents the costs of operating the aircrafts over a distance of 5000 miles or 8 000 km

Aircraft type engine seats	A340-300 CFM56-5C4 295	767-300ER CF6-80C2 305
Operating cost per trip		
tripdistance [nm]	5,000	5,000
Number of trips per year	460	460
Ownership per trip	46,957.17	51,178.04
Variable cost per trip		
fuel	17,795.02	19,650.86
crew flightdeck	5,434.78	5,434.78
crew cabin	3,913.04	3,913.04
navigation charges	16,885.50	16,832.89
maintenance per flighthour	4,251.87	4,114.85
Fixed cost per trip		
Landing charges	4,702.50	4,673.24
Noise surcharge	0.00	0.00
Groundhandling	3,245.00	3,355.00
Maintenance per cycle	679.59	646.00
Total operating cost per trip	103,864.48	109,798.71
Total cost per ASM	0.070	0.072
Total cost per FH	9,891.85	10,660.07
Cost per trip in EUR	90,379.54	95,543.32
Cost per seat-trip in EUR	306.37	313.26

on a number of 460 trips per year.

Table 1

A number of different routes suggested for the charter airlines will be taken into the analysis.

The typical airline route proposes will be one similar to the figure below:

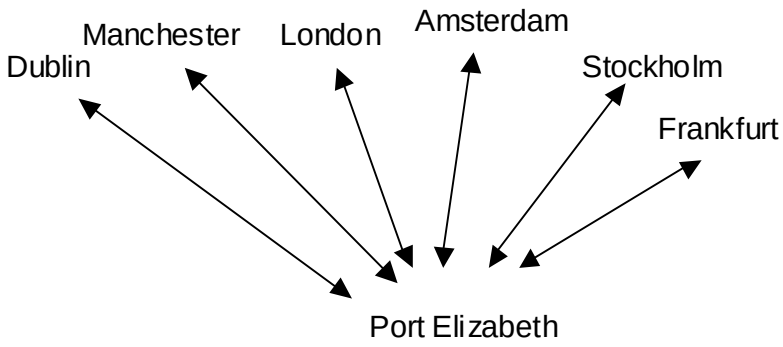

Figure 4

Passenger tariff for different load factors will need to be identified. Total receipts per passenger will be calculated and comparison s between scheduled and charter airlines.

Becherel & Vellas (1995:121), identify the formula necessary for the calculation of total receipts per passenger as being:

$$RT = q_0 \sum_{i=1}^{n} c_n p_n ,$$

where RT= total receipts per passenger
n is number of passengers
q_0 is the quantity of seat-km on offer
c is the load factor
p is the price

The direct operating costs are divided into two categories (Faulkner, Moscado & Laws, 2001):

- Direct cost of the flight, which includes the costs of flight crews, fuel and oil, insurance and airport costs

- The variable costs of material: maintenance costs, depreciation and amortisation and rental of equipment

Four different types of indirect operating cost are identified:

- Stopover cost which include station and ground costs, handling fees and airport taxes
- Passenger service cost: in-flight catering, cabin crew salaries and expenses, cost of insurance
- Reservation costs: ticketing, cost of retail shops and offices and commissions paid to travel agencies
- General and administration costs

According to Page et al. (2001), a number of variables can be controlled in order to improve profitability and reduce costs in airline operations. The table below shows these potential costs reductions areas:

	Cost Drivers		
Cost Items	**Route Network**	**Fleet Composition**	**Company Policies**
Aircraft crew costs	XXX	XXX	XXX
Engineering Overheads	X	XXX	
Direct Engineering Costs	X	XXX	X
Marketing	XXX		X
Aircraft Standing	XXX	X	
Station and Ground Services	X		X
Passenger Services	X		X
General and Administrative Costs	X		X
Fuel		X	
Airport and En Route Costs	X		
Direct passenger Service			X

(Source: Page et al., 2001)

XXX Significant Cost Reduction Potential
X Some Cost implications

Table 2

When looking at the projected benefits two types are identified. Firstly the benefits in terms of operating profit for the charter airline company will be calculated. The second types of benefits that will be considered are the economic benefits that the increase in the number of tourists will bring to the region. In order to calculate the local income, tourist expenditure and the local income multiplier need to be known.

Tourist expenditure will include the anticipated number of visitors and their anticipated expenditure by type.

The total business profits will be calculated by subtracting the wages from the local income brought in by the additional tourists. A look will also be taken at the cost-benefit ratio, which will show us the approximate rate of return on identifiable investment costs.

As shown by Stynes (2003), the economic impact of the additional income due to the anticipated increase in tourists will be calculated using the formula:

Economic Impact = Number of Visitors * Average Spending per Visitor * Regional Income Multiplier

The income multiplier will be estimated using the equation:

Income Multiplier = Total Income Generated per annum/ Initial Cash Injection by Tourists

From a cost perspective wages need to be derived by estimating the number of additional jobs necessary to serve the projected number of tourists. The number will be determined by making an inventory of support services and labour supply.

Net measurable benefits will be calculated regarding the company's operating costs and projected benefits as well as for the economic projected costs and benefits. The estimation of the cost-benefit ratio will show us the approximate rate of return on identifiable investment costs.

Appraisals and recommendations

A general appraisal of the economic environment will include the integration of both demand and supply factors. Obtaining information with regard to current and future developments in Port Elizabeth and the adjacent region will render a more accurate picture.

An assessment of the market failures or lack thereof will be undertaken depending on the result of cost benefit analysis.

A review based on the supply/demand analysis, cost-benefit analysis and market failure assessment will be presented. The result will provide insight into the viability of establishing a charter airline based in Port Elizabeth. Based on the research, suggestions will be made regarding ways in which the air-charter

company will operate. Also options will be identified and put forward regarding the structure of an appropriate airline company will be put forward.

Potential uses for the research

The project undertaken will be very useful in assessing the scope for promoting tourism in Port Elizabeth and surrounding area through the development of a charter airline operation based in the city.

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