MBAD 822 Marketing Management
Individual Assignment

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<u>OPTION 1:</u>
Analyse the market needs for the Potchefstroom airport.

Prof Christo Bisschoff

BUSINESS SCHOOL
BESIGHEIDSKOOL
SEKOLO SA KGWEBO

SOLEMN DECLARATION – INDIVIDUAL ASSIGNMENT

Solemn declaration by the student

Module: Marketing Management
Module Code: MBAD 822
Assignment No.: 1
Assignment due date: 31 August 2020

I Johann Heinrich Dorfling declare herewith that the assignment which I herewith submit to the North-West University as partial completion of the requirements set for the MBA degree, is my own work.

Signature of student  Student number 33468974

Signed at Reitz this 05 day of August 2020

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1 LITERATURE STUDY

1.1 Air transport to small destinations

To advance economic development, air transport might just be the tool to use, although it is uncertain which boosts which (Tolcha *et al.*, 2020). Small regional aircraft, which can take up to 19 passengers, might just be the thing needed to boost this development (Paul *et al.*, 2020). In South Africa, the deregulation of air transport have changed the marketplace (Mhlanga, 2017), and the effects range from stimulation for new products and services to changes in the functioning of and structure of these markets (Mhlanga, 2017). For a modern developing civilization, the mobile fast transportation of cargo and people are significant. Where long-distance transport with short travel times is needed, their aircraft is the answer as in the entire transportation system, it is the fastest available means (Majka, 2013), and different concepts are needed that have feasible solutions (Paul *et al.*, 2020).

It was found that in some countries, air transport drives economic growth and in other countries that economic growth drives air transport systems (Tolcha *et al.*, 2020). In Spain, it was found that in the years from 2010 to 2015 the network of the airport has expanded dramatically and that the intensive construction of infrastructure for air transport does form the basis for economic growth (Grancay, 2009). It can be said that with fast-economic progress, it is necessary to develop the transport infrastructure. This will especially be true for airports and motorways (Majka, 2013).

For Kenya, Nigeria and South Africa, economic development was the creator for air transport. For Ethiopia, the air transport industry stimulated economic development in the country. In other countries like Senegal and Angola no clear relationship to which stimulates which could have been established (Tolcha *et al.*, 2020). According to literature, there is a positive linear regression between GDP and air transport in the period between 1993 and 2016 (Pisa & Luke, 2018). This might be influenced by factors like income per capita, the share of low-cost carriers in terms of the national aviation market and the comparative geographical advantage as a natural hub (Tolcha *et al.*, 2020).

The strive to grow tourism is usually the motivator to build and expand airports in Spain (Grancay, 2009). In first world countries, the alternative transport options, like high-speed

rail, which often is less expensive and faster, is imposing an increase in competition (Paul *et al.*, 2020). Deregulation, on the other hand, benefitted passengers as a wider variety of options was made available as well as more frequent flights and more options in terms of departure times become available. Deregulation in the South African market broke the monopoly held by SAA (South African Airways) (Mhlanga, 2017) and had a wide-reaching effect on the market for domestic air travel (Mhlanga, 2017).

Some countries, like Spain, have a decentralisation policy which then contributes to the building of airport buildings and infrastructure. This is also promoted by cheap financing made available via the European Union (Grancay, 2009). A cheaper infrastructure is needed for small local airports, as it needs short take-off and landing capabilities, depending on the size of the planes. Normally the small local airports will only accommodate small aircraft, at the most, 19-seater aircraft, which also use minimum infrastructure (Paul *et al.*, 2020). In Europe, it was found that light transport aircraft complement the already established air transport industry as it of an alternative to those who need it (Majka, 2013).

Smaller aircraft are used for different applications as can be seen in the figure below.

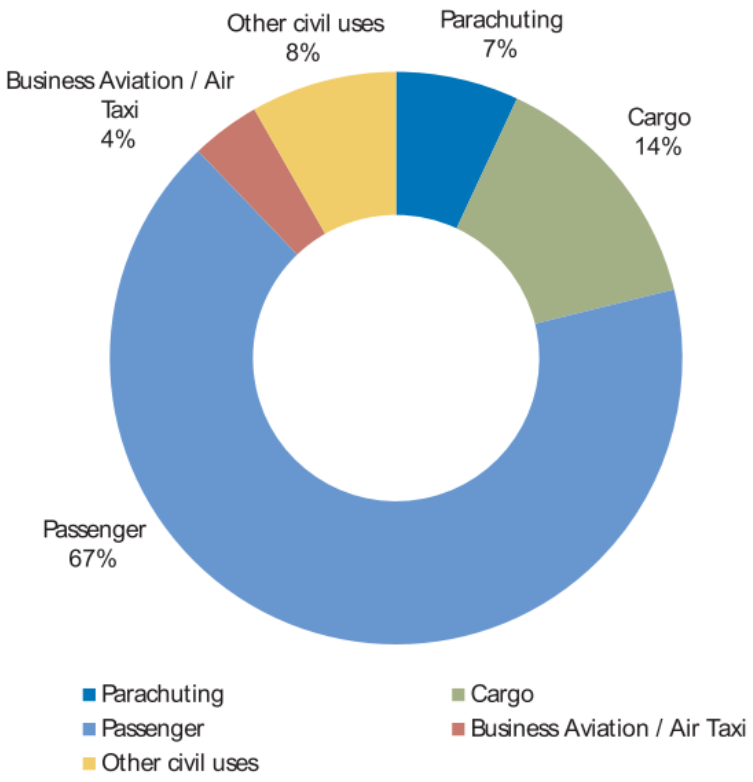

Figure 1: Share of civil uses of 19-seater aircraft (Paul *et al.*, 2020).

This shows that small aircraft are used for much more than just transporting people. This multiple uses of the aircraft are adding value to the owner's asset. It can be said that light aeroplanes have a wider field for application as it has a lower cost and higher flexibility and is easier to adjust to changing marketing conditions and demands (Majka, 2013).

The financial crisis of 2008 put a new focus on the economic sustainability of small local airports in Spain. For airports and airlines, as in normal business, the need to streamline service and to reduce cost and prevent losses will always be a focal point. Low-cost carriers (LCC's) is normally favoured by subsidies. This made it easier to render a cheap service and to boost air passenger traffic, specifically in Spain, and it also boosted the development of small local airports. In South Africa, the entry of numerous LCC's resulted in overcapacity in the domestic market which affected the performance of the airlines, negatively (Mhlanga, 2017).

In Spain specific, the economic crisis of 2008, revealed that the LCC model has a weakness, and this weakness was most evident in the small local airports. In economic tough times, these are the airports that cannot be maintained, as they are not profitable, as the quantity of travellers has declined too radical. In Spain, the road and highway network and numerous high-speed rails have reduced travel times by land and has thus brought cities closer together, putting even more strain on the small local airports and the LCC.

These factors have pushed air travel to the larger airports that offer better connections to domestic and international flights. This same tendency was also observed in other European countries (Grancay, 2009). There will only be a place in the market if local transportation is competitive and has efficiency indicators (Majka, 2013). In South Africa, the protection of the national carrier, by selective and partial deregulation, have a considerable threat to private operators, resulting in aviation businesses being forced into an unprofitable situation to compete, also impacting negatively on regions tourism prospects and business in general (Mhlanga, 2017).

The decline in the use of smaller aircraft, like 19-seaters, can be seen in the figure below, for different countries in the world.

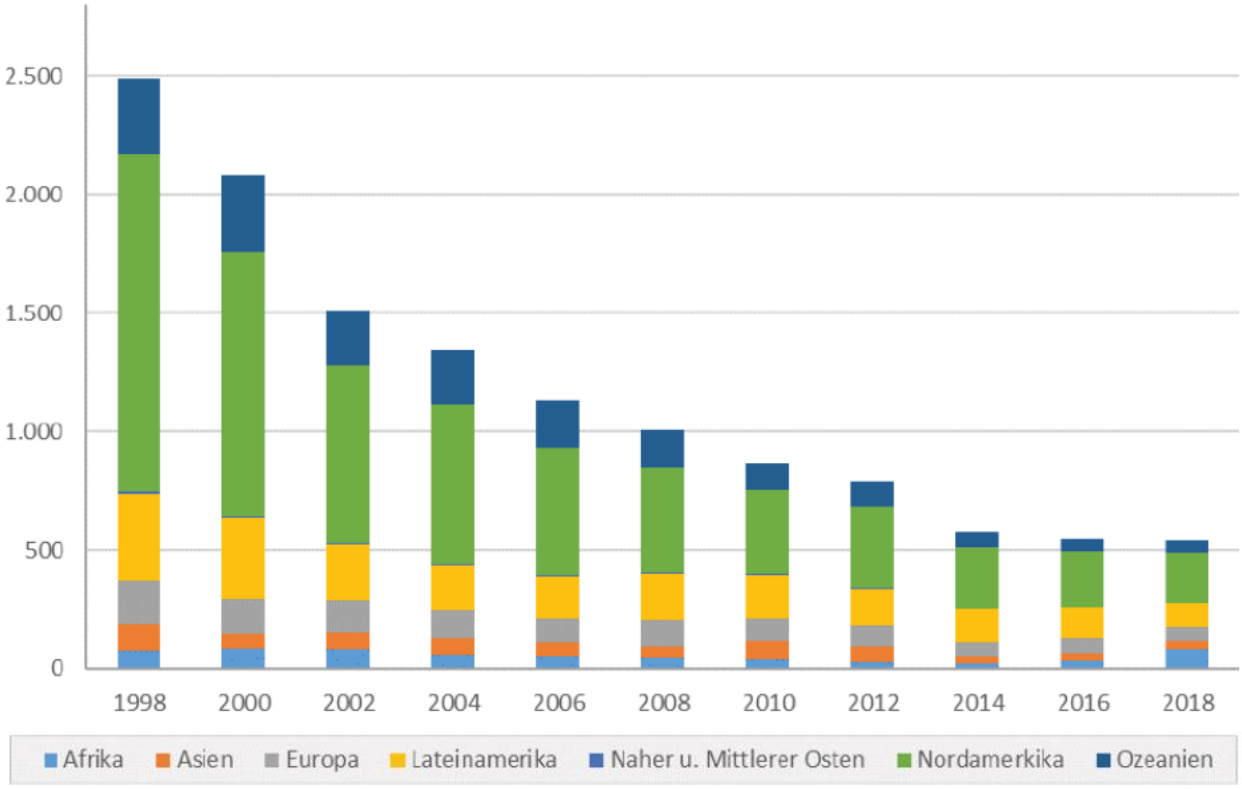

Figure 2: Number of departures per region per year (Paul *et al.*, 2020)

The operating cost of running an air service is high. Even with the subsidiaries, numerous of the LCC do not survive. In the period from 1991 to 2016, a total of 17 LCC entered the South African market. By 2017, only eight of those were still in operation (Mhlanga, 2017). Even the State-owned SAA also suffered huge financial losses and had to be bailed out numerous times due to un-profitability.

The table below shows the history of LCC airlines in South Africa, after deregulation, for the period 1991 to early 2017.

Table 1: History of airlines in the South African domestic market 1991 – 2017 (Mhlanga, 2017).

	AIRLINE	OPERATIONAL	
		FROM	UNTIL
1	SA Airlink	March 1992	Still operating
2	Bop Air	July 1979	September 1992
3	Flitestar	October 1991	April 1994
4	SA Express (SAX)	April 1994	Still operating
5	Sun Air	November 1994	August 1999
6	Phoenix Airways	December 1994	August 1995
7	Atlantic Airways	August 1995	October 1995
8	Nationwide Airways	December 1995	April 2008
9	Kulula.com	August 2001	Still operating
10	1Time	February 2004	November 2012
11	CemAir	March 2006	Still operating
12	Mango	October 2006	Still operating
13	Velvet Sky	March 2011	February 2012
14	Fly Go Air	February 2012	Still operating
15	FlySafair	October 2014	Still operating
16	Skywise	March 2015	December 2015
17	Fly Blue Crane	September 2015	Still operating

Deregulation made air travel more affordable for the user, due to the higher demand and more competition, and the growth in passenger number did increase because of it. The number of LCC increased so much (more than the increase in passengers, resulting in an over-supply), that it became a cutthroat business. Per capita, South Africa has more airlines-per-person than the US, China or Europe (Mhlanga, 2017).

Although South Africa is spoiled for choice, another viable option is electric aircraft. Some of it is fitted with a range extender, which amongst other advantages, will also lead to a reduction in air pollution and emissions (Paul *et al.*, 2020). In the modern era that is something to keep in mind, and further, degradation of the South African roads, especially in the rural areas where the maintenance is not done, using air transport can positively influence economic revitalization (Majka, 2013).

The extend of multiple airlines in one country does bring opportunity for potential passengers, amongst others: choice, better prices, different departure times, to name but a few. For the airlines who tried to survive, not even mention to thrive, it is a struggle. The fact remains, the numerous options and offerings did have a positive effect on tourism in South Africa (Mhlanga, 2017).

The best way to choose the correct aircraft for trying circumstances is based on technical parameters as well as the area where it will be used. This can be successfully done by using a method of multiple objective optimizations. If deregulation is a good or bad thing for this type of industry is arguable (Mhlanga, 2017).

1.2 Typically suitable aeroplanes

From the above section, smaller aircraft will be needed, especially in the beginning to have a financially sustainable solution. There are numerous aeroplanes available in the market and it will be crucial to choose the correct ones to be competitive and sustainable.

In the airline industry, there are various challenging factors, like high operating costs, low-profit margins, high capital investments, strict noise-, security- and environmental regulations (Ssamula, 2006). All these need to be kept in mind when choosing.

Below are examples of suitable aeroplanes, depending on the need (Textron-Aviation, 2020).

PRODUCTCARD-GRAND CARAVAN EX-091719

GRAND CARAVAN EX

The CESSNA GRAND CARAVAN EX aircraft is known for its dependable and efficient performance by regional airlines, charter operators and cargo carriers worldwide.

- **Maximize your flights with more than 3,600 pounds of useful load.**
- **Take control with the latest technology in integrated cockpit avionics, the GARMIN G1000 NXi, featuring an improved graphical interface, more powerful hardware, higher-resolution displays and added functionality to improve situational awareness.**
- **Optional *Garmin* enhanced automatic flight control system (E-AFCS) with electronic stability and underspeed protection and emergency descent mode.**
- **Take more with large cargo doors and an optional cargo pod for oversized loads.**
- **Go anywhere with rugged landing gear for unimproved airstrips and optional amphibious floats.**

DIMENSIONS		
Wingspan	52 ft 1 in	15.88 m
Length	41 ft 7 in	12.67 m
Height	15 ft 1 in	4.60 m

ENGINE	Pratt & Whitney Canada PT6A-140
Engine Output	867 shp

WEIGHTS		
Max Takeoff Weight	8,807 lb	3,995 kg
With Cargo Pod	8,807 lb	3,995 kg
Typical Empty Weight	5,150 lb	2,336 kg
With Cargo Pod	5,310 lb	2,409 kg
Useful Load	3,692 lb	1,675 kg
With Cargo Pod	3,532 lb	1,602 kg

MAX OCCUPANTS	10–14*

PERFORMANCE		
Takeoff Ground Roll (MTOW)	1,399 ft	426 m
With Cargo Pod	1,399 ft	426 m
Max Climb Rate	1,330 ft/min	405 m/min
With Cargo Pod	1,275 ft/min	389 m/min
Max Cruise Speed	195 ktas	361 km/hr
With Cargo Pod	185 ktas	343 km/hr
Max Range	964 nm	1,785 km
With Cargo Pod	912 nm	1,689 km

Performance data is based on standard conditions with zero wind. Field performance assumes a level, dry, hard-surface runway. Range is based on a ferry mission at LRC with 45 minutes reserve.

* Dependent on local regulations.

14 SEATS

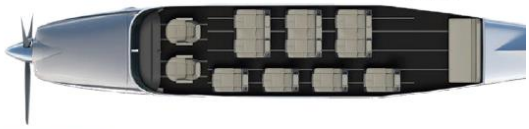

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Figure 3: Aeroplane: GRAND CARAVAN EX

PRODUCTCARD-JET-700-091819

CITATION LONGITUDE

The CESSNA CITATION LONGITUDE aircraft revolutionizes the super-midsize segment. No other business jet in this class gives you more range, greater payload or higher cruise speed at a lower total ownership cost.

- Engineered to give you the quietest, most comfortable cabin in its class.
- The spacious cabin and double-club seating afford at least 11 percent more legroom than the competition.
- Designed and built in-house, the fully lay-flat seats are crafted for smooth mobility as you work or relax in flight.
- The forward wet galley enhances cabin service with plenty of room for food preparation.
- The large walk-in baggage compartment is accessible throughout the entire flight without any restrictions.
- Arrive refreshed thanks to a low cabin altitude that does not exceed 5,950 feet.

DIMENSIONS		
Wingspan	68 ft 11 in	21.01 m
Length	73 ft 2 in	22.30 m
Height	19 ft 5 in	5.92 m

ENGINES		
	Honeywell HTF7700L	
Thrust	7,665 lb ea	34.10 kN ea

WEIGHTS		
Full Fuel Payload	1,600 lb	726 kg
Max Takeoff Weight	39,500 lb	17,917 kg

MAX PASSENGERS	12

PERFORMANCE		
Max Cruise Speed	483 ktas	895 km/h
Range	3,500 nm	6,482 km
Takeoff Field Length (MTOW)	4,810 ft	1,466 m
Time to Climb (Direct)		FL430 in 20 min

Performance data is based on standard conditions with zero wind. Field performance assumes a level, hard-surface, dry runway. Range based on four-passenger mission at Mach 0.80 with NBAA IFR reserves. All data is preliminary and subject to change.

Cabin shown with a standard configuration.

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Figure 4: Aeroplane: CITATION LONGITUDE

PRODUCTCARD-JET-560XLS+-091819

CITATION XLS+

The CESSNA CITATION XLS+ aircraft is the best-selling model of the best-selling brand with outstanding range, a first-class cabin and remarkable performance efficiency.

- The spacious cabin features generous width and stand-up room, allowing passengers to move about with ease.
- Six extra-wide, fully reclining leather seats provide optimal comfort.
- Get in the air and to your destination faster with a short field performance of 3,560 feet.
- Rest assured, you are supported by the farthest-reaching and most accessible service network.

DIMENSIONS		
Wingspan	56 ft 4 in	17.17 m
Length	52 ft 6 in	16.00 m
Height	17 ft 2 in	5.23 m
ENGINES	Pratt & Whitney Canada PW545C	
Thrust	4,119 lb ea	18.32 kN ea
WEIGHTS		
Max Takeoff Weight	20,200 lb	9,163 kg
Basic Operating Weight	12,860 lb	5,833 kg
Useful Load	7,540 lb	3,420 kg

MAX PASSENGERS		12
PERFORMANCE		
Max Cruise Speed	441 ktas	817 km/h
Max Range	2,100 nm	3,889 km
Takeoff Field Length (MTOW)	3,560 ft	1,085 m
Time to Climb (Direct)	FL450 in 29 min	

Performance data is based on standard conditions with zero wind. Field performance assumes a level, hard-surface, dry runway. Range is based on a ferry mission at LRC with NBAA IFR Reserves (100 nm).

Cabin shown with a standard configuration.

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Figure 5: Aeroplane: CITATION XLS+

Figure 6: Aeroplane: BOEING 737-200

PRODUCTCARD-JET-680-091819

CITATION SOVEREIGN+

The CESSNA CITATION SOVEREIGN+ aircraft provides unbeatable short field performance, a range of 3,200 nautical miles and exceptional baggage capacity.

- The well-appointed, double-club cabin is crafted to encourage comfort and productivity for the whole team.
- Standard domestic internet allows in-flight connectivity for working and relaxing.
- The wireless cabin management system controls amenities including lighting, temperature, window shades and entertainment.
- State-of-the-art GARMIN G5000 avionics offer unmatched situational awareness and intuitive touch-screen control.
- Rest assured, you are supported by the farthest-reaching and most accessible service network.

DIMENSIONS		
Wingspan	72 ft 4 in	22.05 m
Length	63 ft 6 in	19.35 m
Height	20 ft 4 in	6.20 m

ENGINES		
	Pratt & Whitney Canada PW306D	
Thrust	5,907 lb ea	26.28 kN ea

WEIGHTS		
Max Takeoff Weight	30,775 lb	13,959 kg
Basic Operating Weight	18,235 lb	8,271 kg
Useful Load	12,790 lb	5,801 kg

MAX PASSENGERS	12

PERFORMANCE		
Max Cruise Speed	460 ktas	852 km/h
Max Range	3,200 nm	5,926 km
Takeoff Field Length (MTOW)	3,530 ft	1,076 m
Time to Climb (Direct)		FL450 in 27 min

Performance data is based on standard conditions with zero wind. Field performance assumes a level, hard-surface, dry runway. Range is based on a ferry mission at LRC with NBAA IFR Reserves (200 nm).

Cabin shown with a standard configuration.

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Figure 7: Aeroplane: CITATION SOVEREIGN+

CHAPTER 2 EMPIRICAL RESEARCH

2.1 Research Design

The research started with a literature review, followed by interviews with random persons. A list with predetermined questions was asked and this data was used for quantitative data analysis.

2.2 Study Population

SPECIAL NOTE: Due to COVID-19 lockdown legislation and subsequent travel restrictions, this study was performed in Reitz in the Eastern Free State of South Africa, as if we were situated in Potchefstroom.

The study population were persons who live and work in Reitz and working for Grain Field Chickens.

2.3 Sample

The sample used for this study was a total of 11 persons. These persons were chosen from different post grades and ethnic backgrounds to represent a good sample of the community.

2.4 Method of data collection

As per literature (Calkins, 2015), data are seen as fact or figures, be it in the form of numeric or non-numeric, which a person can use to come up to a conclusion. The nature of this can be or Quantitative or Qualitative. Quantitative represent counts in discrete or continuous form. Discrete data is seen as data that is numeric with a finite number and possible values.

The nature of the data collected for this study was in the form of a questionnaire. A structured questionnaire with predetermined questions was circulated to gather the data with. The data was then analysed using Contingency Tables, and conclusions made based on the findings. Relationships between the different variables were determined using correlations.

2.5 Questionnaire

The filled in questionnaires can be seen in the Appendix. The following questions were asked, with options to choose from:

1. If you have to, on which day of the week will you make use of flights out of Potchefstroom?

   Mon Tue Wed Thu Fri Sat Sun

2. If you have to, on which day of the week will you make use of flights into Potchefstroom?

   Mon Tue Wed Thu Fri Sat Sun

3. What will be your preferred time slot for flying out of Potchefstroom?

   Early Morning Mid-Day Late Afternoon

4. What will be your preferred time slot for flying into Potchefstroom?

   Early Morning Mid-Day Late Afternoon

5. For what purpose will you make use of flights from Potchefstroom?

   Leisure Business/Work

6. What do you feel is a reasonable price for a return-flight between Potchefstroom and Cape Town?

   R1,000 R3,000 R5,000 R7,000

7. How often will you make use of flights from Potchefstroom to Cape Town?

   Never Weekly Monthly 3-Monthly 6-Monthly Annually

8. What do you feel is a reasonable price for a return-flight between Potchefstroom and Durban?

   R1,000 R3,000 R5,000 R7,000

9. How often will you make use of flights from Potchefstroom to Durban?

Never Weekly Monthly 3-Monthly 6-Monthly Annually

10. What do you feel is a reasonable price for a return-flight between Potchefstroom and Johannesburg?

    R1,000 R3,000 R5,000 R7,000

11. How often will you make use of flights from Potchefstroom to Johannesburg?

    Never Weekly Monthly 3-Monthly 6-Monthly Annually

CHAPTER 3 COLLECTION AND ANALYSIS OF DATA

The data was collected by distributing 11 questionnaires, with predetermined outcomes, to 10 randomly chosen persons (one person did two questionnaires as he requested it like that). The questionnaires were done on the following basis, with the following "rules" stated on the questionnaires:

1. For the purpose of this research, YOU are living in POTCHEFSTROOM, doing exactly what you are doing now in Reitz. Same company, same income, all the same, we are just in POTCHEFSTROOM.
2. Please choose an answer from each of the questions. There is no right or wrong answer.

An Informed Consent Statement was filled in and signed by each respondent. The Informed Consent Statements are in the Appendix, together with the filled-in questionnaires.

3.1 Data and Correlations

The data was put into a Contingency Table and analysed, using MS Office Excel. A summary of the data is in the Appendix. The outcome of the data analysis, which based on correlations between the different factors, were as follow (please note that only the highest and/or most relevant correlations are listed):

1. The correlation between respondents and business travel was 0.55
2. The correlation between respondents and leisure travel was 0.45
3. The correlation between business travel and time slot of leaving Potchefstroom in the late afternoon was 0.50
4. The correlation between business travel and time slot of leaving Potchefstroom in the early morning was 0.33

5. Most business travellers, prefer to leave Potchefstroom on a Sunday and return on a Friday
6. Most leisure travellers, prefer to leave Potchefstroom on a Friday and return on a Sunday
7. Of all options offered, Fridays and Sundays were the most chosen for coming and going
8. The correlation between all flights INTO Potchefstroom on a Friday and landing time slot of early morning was 0.50
9. The correlation between all flights INTO Potchefstroom on a Friday and landing time slot of late afternoon was 0.50
10. The correlation between all flights INTO Potchefstroom on a Sunday and landing time slot of late afternoon was 0.60
11. The correlation between all flights INTO Potchefstroom on a Sunday and landing time slot of mid-day was 0.40
12. The correlation between leisure travellers INTO Potchefstroom on a Sunday was 0.60
13. The correlation between business travellers INTO Potchefstroom on a Friday was 0.67
14. The correlation between all business flights OUT OF Potchefstroom on a Sunday was 0.50
15. The correlation between all leisure flights OUT OF Potchefstroom on a Friday was 0.80
16. The correlation between business travel OUT OF Potchefstroom on a Sunday and time slot of late afternoon was 0.75
17. For business travel to Cape Town, the correlation with the suggested reasonable price of R3,000 was 0.83
18. For leisure travel to Cape Town, the correlation with the suggested reasonable price of R3,000 was 0.60
19. The correlation between business travel to Cape Town with the frequency of 3-Monthly was 0.67
20. The correlation between leisure travel to Cape Town with the frequency of 3-Monthly was 0.40
21. The correlation between all flights to Cape Town with the frequency of 3-Monthly was 0.55
22. For business travel to Durban, the correlation with the suggested reasonable price of R3,000 was 0.20
23. For leisure travel to Durban, the correlation with the suggested reasonable price of R1,000 was 0.80
24. The correlation between business travel to Durban with the frequency of 3-Monthly was 0.33
25. The correlation between leisure travel to Durban with the frequency of 6-Monthly was 0.60
26. For business travel to Johannesburg, the correlation with the suggested reasonable price of R1,000 was 0.83
27. For leisure travel to Johannesburg, the correlation with the suggested reasonable price of R1,000 was 1.00
28. No mentionable correlation was found for leisure travel to Johannesburg on suggested frequency intervals.
29. No mentionable correlation was found for business travel to Johannesburg on suggested frequency intervals.

3.2 Discussions of results and correlations

Based on the very small sample taken and, on the correlations, obtained through the data analysis, the following can be said.

There is a slightly larger demand for business flights than for leisure flights. The businesspersons have a slightly bigger demand to leave Potchefstroom in the late afternoons. Business travellers prefer to leave Potchefstroom on a Sunday and only returning on a Friday, while leisure travellers, prefer to leave Potchefstroom on a Friday and return on a Sunday – typical weekend leisure travel. Fridays and Sundays are by far the most chosen day to travel, into- as well as out-off Potchefstroom.

Based on flights with different prices, business travellers are willing to pay more than leisure travellers, irrelevant the destinations on offer. The price per flight mostly chosen as reasonable for a return flight from Potchefstroom to Cape Town and/or Durban was R3,000. The data also suggests that people are more likely to travel more often for business than for leisure. The data indicate that respondents do not have a high demand for air travel from Potchefstroom to Johannesburg, probably because it is relatively close to each other. The ones that do indicate that they will make use of these flights, do not want to pay much for it.

CHAPTER 4 BREAKEVEN ANALYSIS AND AEROPLANES

4.1 Operational costs

Numerous factors influence the profit and operational cost of an aeroplane and an airline in total. These may include, amongst other, aircraft utilization, fleet size, cost of labour as well as the type of aircraft, the speed at which it travels, the crew needed and the list goes on (Camilleri, 2018).

The direct operating costs are only applicable when the aircraft is actually operating/flying. The aircraft-related operating costs include fuel & oil, maintenance, landing fees, handling fees and crew expenses. The fuel cost will be influenced by the price (as this change constantly every month), as well as operations of the aircraft, like taxi, take off, climb, cruise, descent and landing (LaFata, 2017). Maintenance cost will to a large degree, be influenced by the age of the aircraft. Airport authorities charge landing fees for airport facilities and services. The crew complement plays a major role in crew expenses (Camilleri, 2018).

The operating costs for the aircraft's listed above, are as follow (Aircraft-Cost-Calculator, 2020):

1. GRAND CARAVAN EX $948.86 per hour

2. CITATION LONGITUDE $3,912.07 per hour
3. CITATION XLS+ $2,910.90 per hour
4. BOEING 737-200 $3,094.11 per hour
5. CITATION SOVEREIGN+ $2,642.41 per hour

4.2 Breakeven analysis and cost price per seat

Based on the operating costs listed above and an exchange rate of $1: R17.66, as on 07/0/2020, the breakeven point, per plane, per destination is listed below:

Table 2: Breakeven analysis for return flights from Potchefstroom to Cape Town

Plane	Max Cruise Speed (km/h)	Flying Distance (km)	Max Seat capacity	Operational Cost per hour ($1 = R17.66)	Flight time to Cape Town - one way (h)	Cost of Return Flight	Cost price per seat
GRAND CARAVAN EX	361	1154.92	14	R 16,756.87	3.20	R 107,217.96	R 7,658.43
CITATION LONGITUDE	895	1154.92	12	R 69,087.16	1.29	R 178,301.99	R 14,858.50
CITATION XLS+	817	1154.92	12	R 51,406.49	1.41	R 145,337.55	R 12,111.46
BOEING 737	848	1154.92	175	R 54,641.98	1.36	R 148,837.54	R 850.50
CITATION SOVEREIGN+	852	1154.92	12	R 46,664.96	1.36	R 126,512.43	R 10,542.70

Table 3: Breakeven analysis for return flights from Potchefstroom to Durban

Plane	Max Cruise Speed (km/h)	Flying Distance (km)	Max Seat capacity	Operational Cost per hour ($1 = R17.66)	Flight time to Durban - one way (h)	Cost of Return Flight	Cost price per seat
GRAND CARAVAN EX	361	520	14	R 16,756.87	1.44	R 48,274.63	R 3,448.19
CITATION LONGITUDE	895	520	12	R 69,087.16	0.58	R 80,280.05	R 6,690.00
CITATION XLS+	817	520	12	R 51,406.49	0.64	R 65,437.89	R 5,453.16
BOEING 737	848	520	175	R 54,641.98	0.61	R 67,013.75	R 382.94
CITATION SOVEREIGN+	852	520	12	R 46,664.96	0.61	R 56,961.92	R 4,746.83

Table 4: Breakeven analysis for return flights from Potchefstroom to Johannesburg

Plane	Max Cruise Speed (km/h)	Flying Distance (km)	Max Seat capacity	Operational Cost per hour ($1 = R17.66)	Flight time to JHB - one way (h)	Cost of Return Flight	Cost price per seat
GRAND CARAVAN EX	361	131	14	R 16,756.87	0.36	R 12,161.49	R 868.68
CITATION LONGITUDE	895	131	12	R 69,087.16	0.15	R 20,224.40	R 1,685.37
CITATION XLS+	817	131	12	R 51,406.49	0.16	R 16,485.31	R 1,373.78
BOEING 737	848	131	175	R 54,641.98	0.15	R 16,882.31	R 96.47
CITATION SOVEREIGN+	852	131	12	R 46,664.96	0.15	R 14,350.02	R 1,195.84

The most cost-effective aeroplane is thus the BOEING 737-200 on all the routes.

CHAPTER 5 RECOMMENDATIONS AND ADVICE TO THE PREMIER

Based on the research done and on the break-even passenger cost analysis, the following recommendations can be made:

1. If, and only if, capital to purchase the aircraft is not part of the calculation and not a factor, the recommendation is to use a BOEING 737-200.
2. Even at a seat utilization of only 11.43% (20 of the 175 seats), the operating cost will still be the lowest of all the aeroplanes considered.
3. For a return flight from Potchefstroom to Cape Town, respondents were most willing to pay R3,000 per seat. The operating cost analysis worked out on R850.50 per seat at full capacity of 175 seats.
4. For a return flight from Potchefstroom to Durban, respondents were most willing to pay R2,000 per seat (half said R3,000 and a half said R1,000). The operating cost analysis worked out on R382.94 per seat at full capacity of 175 seats.
5. For a return flight from Potchefstroom to Johannesburg, respondents were most willing to pay R1,000 per seat. The operating cost analysis worked out on R96.47 per seat at full capacity of 175 seats.
6. The researched showed that the respondents preferred price per destination, will be more than enough to cover the operational costs of the BOEING 737-200.
7. The Potchefstroom airport is capable to accommodate the BOEING 737-200.
8. According to the research, the demand for flights into- and out off Potchefstroom is concentrated around Fridays and Sundays.
9. Based on operating cost alone, this will be a feasible and profitable service.

It needs to be stated, that if the capital expenditure needs to also be taken into consideration, this will not be a feasible service for the following reasons:

1. The capital expenditure will influence the per-seat price so much that the cost price will be much higher than what the respondents were willing to pay.
2. Flights on Fridays and Sundays only, as per the respondent's feedback, will not be cost-effective as the plane will basically stand for five of the seven days.
3. The crew also have to be paid for the full week, although only going to work for 28.6% of the week.

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ANNEXURES A – DATA FROM QUESTIONNAIRES

Table 5: Data from questionnaires

Respondent Name	Flights OUT of Potch	Time slot OUT OF	Flights INTO Potch	Time slot INTO	Leisure or Business	P to CT PRICE	P to CT WHEN	P to DBN PRICE	P to DBN WHEN	P to JHB PRICE	P to JHB WHEN
Wessel	Wednesday	Early Morning	Friday	Later Afternoon	Business	5000	Monthly	3000	Monthly	1000	Never
Ismail	Friday	Late Afternoon	Sunday	Later Afternoon	Leisure	1000	Monthly	1000	6-Monthly	1000	6-Monthly
Linah	Friday	Late Afternoon	Sunday	Mid-Day	Business	3000	3-Monthly	1000	Monthly	1000	Monthly
James	Friday	Mid-Day	Sunday	Later Afternoon	Business	5000	6-Monthly	1000	Annually	1000	Never
Theo	Sunday	Late Afternoon	Friday	Early Morning	Business	3000	3-Monthly	3000	3-Monthly	3000	3-Monthly
Monica	Sunday	Early Morning	Monday	Early Morning	Leisure	7000	3-Monthly	3000	Monthly	1000	Weekly
Drizette	Friday	Late Afternoon	Sunday	Mid-Day	Leisure	3000	6-Monthly	1000	6-Monthly	1000	Monthly
Lize-Mari	Friday	Early Morning	Tuesday	Later Afternoon	Leisure	3000	Annually	1000	6-Monthly	1000	Never
Dicky 1	Friday	Early Morning	Sunday	Later Afternoon	Leisure	3000	3-Monthly	1000	3-Monthly	1000	3-Monthly
Dicky 2	Sunday	Late Afternoon	Friday	Early Morning	Business	3000	3-Monthly	1000	3-Monthly	1000	3-Monthly
Wally	Sunday	Late Afternoon	Friday	Later Afternoon	Business	3000	3-Monthly	3000	6-Monthly	1000	Weekly

ANNEXURES B – CONCENT FORMS & QUESTIONNAIRES

Submitted separately, as the file is becoming too large.