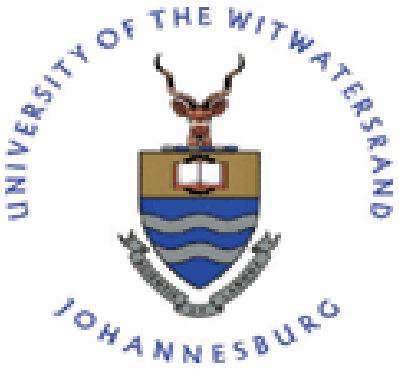

The critical success factors for a low cost airline carrier in Sub-Saharan Africa

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A research report submitted to the Faculty of Engineering and the Built Environment, University of the Witwatersrand, in partial fulfilment of the requirements for the degree: Master of Science in Engineering.

15 November 2015

I. Declaration

I declare that this dissertation is my own unaided work. It is being submitted for the Degree of Master of Science to the University of the Witwatersrand, Johannesburg. It has not been submitted before for any degree or examination to any other university.

_____

Joshua Cohen

15th day of November, 2015

II. Abstract

Low-cost carrier airlines such as Ryanair and EasyJet in Europe, and Southwest Airlines in the US, have largely changed the face of the civil aviation markets in their respective regions by providing an accessible form of air transport for the masses. In Sub-Saharan Africa, where current transport options are unsafe and slow, and distances vast, a massive market of potential passengers exists. Yet the region comes with significant challenges and obstacles not present in other parts of the world. By utilising a grounded theory approach, and identifying the factors that were critical to the success of the abovementioned airlines, inferences were drawn with the results of four separate exercises which were undertaken, which collected primary data relevant to the Sub-Saharan African low-cost market. The results obtained indicate that while certain low-cost carrier critical success factors are universal to all regions, Sub-Saharan Africa exhibits many unique characteristics which require any low-cost entrant to apply a unique, innovative approach in order to maximise the chance of success.

III. Acknowledgement

I wish to acknowledge Dr B. Emwanu for the assistance he provided during his supervisory undertaking in the preparation of this dissertation.

I also wish to acknowledge my wife, Jenna, for providing me with unconditional support throughout my Masters studies.

Contents

I Declaration……i

II Abstract……ii

II Acknowledgement……iii

1. List of Figures ……ix

2. List of Tables ……x

3. Acronyms ……xi

4. Definition of Terms ……xii

1. Introduction ……1

1.1 Introduction ……1

1.2 Problem Statement ……3

1.3 Objectives……3

1.4 Research Question ……3

1.5 Research Propositions……3

1.5.1 Proposition 1 ……3

1.5.2 Proposition 2 ……4

1.5.3 Proposition 3 ……4

1.6 Assumptions……4

1.7 Significance of the study ……4

1.8 Structure of the Reports / Paper……5

2. Literature Review ……6

2.1 Global Aviation market ……6

2.2 Sub-Saharan Africa (SSA) Aviation Market ……7

2.3 Alternative Forms of Transport……9

2.4 Low Cost Carrier (LCC) versus Legacy Carrier ……11

2.5 Origins of LCCs ……13

2.6 Market Factors affecting LCCs 13
2.6.1 Market Demand 13
2.6.2 Competition 16
2.6.3 Load Factors 17
2.6.4 Secondary Airports and Aircraft Utilisation 18
2.6.5 Tourism 19
2.6.6 Airports and Infrastructure 21
2.6.7 Labour 23
2.7 Airline Specific factors affecting LCCS 23
2.7.1 Network Type 24
2.7.2 Cost Minimisation 24
2.7.3 Ticket Distribution 27
2.7.4 Ticket Prices 30
2.7.5 Yield Management 30
2.7.6 Aircraft 32
2.7.7 Seating Density 34
2.7.8 Ancillary Revenue 34
2.7.9 Brand 34
2.7.10 Safety Profile 35
2.8 Application in SSA 35
3. Case Studies 37
3.1 Case Study 1 37
3.1.1 Load Factors 37
3.1.2 Ticket Distribution 38
3.1.3 Aircraft 39
3.1.4 Costs 40
3.1.5 Market Obstacles 40

3.2 Case Study 2 41
3.2.1 Ticket Prices 42
3.2.2 Tourism 42
3.3 Concluding Remarks 43
4. Theories governing Low-Cost Carriers 45
4.1 Theories 45
4.1.1 Theory 1 45
4.1.2 Theory 2 46
4.1.3 Theory 3 46
4.2 Theoretical Basis for the Study 47
5. RESEARCH METHODOLOGY 49
5.1 Data Collection and Analysis 49
5.2 Data Sources 49
5.2.1 Primary Data 49
5.2.2 Secondary Data 50
5.3 Admissibility and Methods of achieving Validity 51
5.3.1 Admissibility 51
5.3.2 Internal Validity 51
5.3.3 External validity 53
5.4 General credibility and trustworthiness 53
5.5 Population of the Study 54
5.5.1 Sampling Procedure 54
5.5.2 Questionnaire Design and Administration 55
5.6 Research Ethics 56
6. Results and Analysis 57
6.1 Introduction 57
6.2 Survey 57

6.2.1 Respondents Countries 57
6.2.2 Years of experience 57
6.2.3 Travel to other cities 58
6.2.4 Travel to other countries 58
6.2.5 Air Travel Utilisation 59
6.2.6 Motivation for using air travel 60
6.2.7 Passenger Preferences 60
6.2.8 Ticket Prices 61
6.2.9 Potential Demand 61
6.2.10 Payment Preferences 62
6.2.11 Written responses in questionnaire 62
6.3 Ticket Price Comparison 63
6.3.1 Airfares in SSA 63
6.3.2 Airfares in Europe 64
6.3.3 Airfares in India 64
6.3.4 Airfares in the US 65
6.3.5 Bus fares in SSA 65
6.4 Fuel Costs 66
6.5 One-on-one Interviews 66
7. Discussion 71
7.1 Introduction 71
7.2 Survey 71
7.2.1 Profile of travelers 71
7.2.2 Travel Behaviour 71
7.2.3 Price versus Benefits 72
7.2.4 Method of payment 74
7.3 Ticket price Comparison 74

7.4 Fuel costs 74
7.5 One-on-one Interviews 76
7.5.1 The Market 76
7.5.2 Ownership Structure 78
7.5.3 Costs 81
7.5.4 Ticket Prices 83
7.5.5 Aircraft 84
7.5.6 General Critical Success Factors 86
8. Conclusion 87
8.1 First Objective 87
8.2 Second Objective 88
8.3 Third Objective 88
8.4 Fourth Objective 89
8.5 Proposition 1 91
8.6 Proposition 2 91
8.7 Proposition 3 91
8.8 Limitations of the Study 91
8.9 Recommendations for further research 92
9. References 94
Appendix A: Survey 98
Appendix B - One-on-One interviews 103
Fastjet 103
Jambojet 103
Kulula / Comair 104
FlyAfrica 104
Detailed Interview Summary 104

1. List of Figures

Figure 1: Number of Carriers serving major EAC routes, July 2013 9

Figure 2: Arrival Mode of Transport 10

Figure 3: Number of passengers carried by LCCs in Europe from 1999 – 2011 14

Figure 4: Load factors on intra-European routes in the Period from 2000 – 2007 18

Figure 5: Total Charges for Regional Flights in USD 27

Figure 6: Internet Penetration Rates in per 100 people 29

Figure 7: Countries where respondents reside 57

Figure 8: Years of work experience of the respondents 58

Figure 9: Instances travelled to another city in own country by any mode of transport in last two years 58

Figure 10: Instances travelled to another country by any mode of transport in last two years 59

Figure 11: Last time utilising air transport 59

Figure 12: Instances flown in last two years 60

Figure 13: Reasons for utilising air transport 60

Figure 14: Preferred airline attributes 61

Figure 15: Preferred maximum one-way ticket price in USD 61

Figure 16: Intended air travel utilisation per year 62

Figure 17: Preferred method of payment 62

Figure 18: Jet Fuel Price Comparison – September 2014 (IATA) 66

2. List of Tables

Table 1: Bus versus flight times for several routes in SSA: 11

Table 2: LCC compared to Legacy Carrier Business Model 12

Table 3: Airport Ratings in SSA 22

Table 4: Cost reduction areas for LCC versus legacy carrier 26

Table 5: Case Studies Summary 44

Table 6: Admissibility of data 51

Table 7: Air transport costs in $ cents / km between various SSA locations compiled by Researcher 63

Table 8 Air transport costs in $ cents / km between various European locations compiled by researcher 64

Table 9 Air transport costs in $ cents / km between various Indian locations compiled by researcher 64

Table 10 Air transport costs in $ cents / km between various US locations compiled by researcher 65

Table 11: Road transport costs in $ cents / km between various SSA locations compiled by researcher 65

Table 12: Summarised results of one-on-one interviews 67

3. Acronyms

- SSA – Sub-Saharan Africa
- RPKS – Revenue passenger Kilometres
- CIS – Commonwealth of Independent States
- IATA – International Air Transport Association
- JNB – Johannesburg International Airport (OR Tambo)
- NBO – Nairobi Airport
- BASA - bilateral air service agreements
- EAC – East African Community
- DAR – Dar Es' Salaam Airport
- LUN - Lusaka
- US – United States of America
- UK – United Kingdom
- SADC – Southern African Development Community
- WHO – World Health Organisation
- AfDB – African Development Bank
- BA – British Airways
- AEA – Association of European Airlines
- GDS – Global Distribution system
- VFR – Visiting Friends and Relatives
- YD – Yamoussoukro Decision
- KQ – Kenya Airways

4. Definition of Terms

- LCC – low cost-carrier which seeks to minimise costs and maximise efficiencies, which in turn leads to lower fares. Such airlines generally offer a basic service with additional services charged for separately, and tend to operate on a point to point network rather than hub-and-spoke network.
- Legacy Carrier – higher fare carrier often utilising a hub-and-spoke structure, flying traditional routes and providing a full service offering which offers both an economy and business class section on the aircraft.
- Hub-and-spoke – a network structure usually utilises by legacy carriers whereby all flight routes originate from one main source. Passengers are typically moved through the hub onto other locations.
- Revenue Passengers Kilometres (RPKS) - a measure of revenue earning kilometres flown by an airline.
- Bilateral air service agreements - an agreement which two countries sign in order to allow international commercial air transport services between their territories.
- Costs per seat kilometre – measure of cost incurred per passenger, per kilometre, utilised for normalising and comparing costs across airlines, routes and regions.
- Widebody – larger commercial aircraft usually having multiple passenger classes, mostly used for longer sector length travel such as the Boeing 777 and Airbus A340.
- Narrowbody – smaller commercial aircraft, often used for shorter haul flights, commonly used by LCCs for regional trips such as the Boeing 737 and Airbus A320.
- Apron - the area of an airport where aircraft are parked, unloaded or loaded, refuelled, or boarded.
- GDS - a network operated by a third party company that enables automated transactions between third parties and booking agents in order to provide travel-related services to the end consumers.
- VFR - Tourism related to visiting friends and relatives

1. Introduction

1.1 Introduction

Sub-Saharan Africa (SSA), a land mass larger than the US, China and India combined, consists of fifty-two countries (Library of Congress, 2010) and is home to nearly one billion people (World Bank, 2015). SSA, however, remains relatively insignificant in terms of global trade, tourism and the general migration of people. According to statistics released by the World Bank on www.worldbank.org, SSA's GDP per capita in 2013 was $1,624, compared to $8,622 in Asia and $29,570 and $27,249 in Europe and America (North and South), respectively. In addition, only a small fraction (11 percent) of SSA's trade is with SSA trading partners, compared to Asia where over 50 percent of trade is inter- regional (Schlumberger and Weisskopf, 2014).

Connectivity between SSA's fifty two countries is extremely low (Christie et al., 2011) . The terrain varies greatly from desert to rainforest, generally affecting critical transport infrastructure such as road networks or rail. Most travel occurs via roads which remain largely unpaved or in poor condition, including certain national or and trans-SSA highways (Christie et al., 2011). Furthermore, in many cases, rail networks are remnants of the colonial period (Christie et al., 2011) and it remains a herculean task to coordinate rail transportational integration on the continent given the massive funding requirement and lack of political will and cooperation. Whilst aviation travel is very effective at creating large transportation networks with smaller investment in infrastructure, rail is well-suited to carrying overland heavy cargo and passengers over shorter distances (Boeing, 2013). The investment required to create an aviation network linking two airports being 100 kilometers (kms) apart or 10,000 km apart is effectively the same (Boeing, 2013).

With regard to aviation infrastructure, SSA has several international airports; the largest is OR Tambo in Johannesburg which sees 21 million passengers per annum passing through its terminals (OAG, 2012). East Africa boasts a strong network through both Nairobi and Addis Ababa, offering links to various locations both on the continent and internationally. West Africa however lacks a hub-and-spoke structure by which passengers can be ferried through a central hub to various location (OAG, 2012). Despite reasonably adequate aviation infrastructure and general connectivity (albeit through three major hubs) according to

Boeing (2013), the Revenue Passengers Kilometers (RPKS) flown in Africa in 2012 were a mere $55.76 billion. This is compared to $403 billion RPKS flown in China, $152 billion in South East Asia, $60 billion in South Asia and $104 billion in the Commonwealth of Independent States (CIS) region in the same year (Boeing, 2013). In this statistical data, Africa's number also includes North Africa, and therefore the figure for SSA would be even smaller when correcting for this. These statistics highlight the fact that aviation activity in Africa remains significantly below that which exists in most other regions, notwithstanding SSA's large population and the adequate capacity that exists in its aviation sector. That said, The International Air Transport Association (IATA) is of the view that "nowhere is the potential for aviation greater than on the African continent" (The Economist, 2013).

The term "aviation mega city" has been coined for a city that handles more than 10,000 long-haul passengers per day (Smith, 2013). According to Airbus (2013), as of 2013, the world had 42 such mega cities, with the vast majority located in the US, Europe, Middle East and Asia Pacific region (defined to also include China). Airbus estimates that by 2032, Africa will contain seven of the top twenty fastest growing air traffic countries and will require at least 970 new aircraft to satisfy this demand (Airbus, 2014) . As increased urbanization occurs, demand for travel is forecast to grow at above 6 percent for several countries in SSA; such as South Africa, Nigeria, Angola, Namibia and Mozambique (Airbus, 2014) .

It is apparent from various sources that in the United States (US) and in Western Europe, the emergence of the low cost carrier (LCC) has been fundamental to the growth exhibited in the domestic and regional air traffic networks and passenger RPKS In the European market. In particular, the advent of LCCs has created new demand in market segments that had previously not been well-served by legacy network carriers. This is demonstrated by the fact that in Europe in 2004, 59 percent of demand came from new passengers who had never flown before on an aircraft (Forsyth et al., 2010). Compared to LCC penetration rates of 37 percent in Europe, 30 percent in North America and 34 percent in central/South America, LCCs accounted for approximately 11 percent of total capacity (including both domestic and international) in Africa (Forsyth et al., 2010). This number however, includes the capacity in the North Africa market which should be removed to accurately measure SSA figures, while it is also positively skewed by the South African domestic market which is highly developed compared to the rest of SSA.

1.2 Problem Statement

It is clear that SSA requires a major boost as far as air travel and linkages are concerned, and the solution is the development of a region wide LCC market. That said, significant challenges remain, raising the question whether the LCC model, which has proven to be so successful in other parts of the world can be successfully applied to the SSA market. The situation prevailing in the SSA environment is where so many of the attributes that support the model are simply non-existent in the region. Furthermore, it is common knowledge that despite the apparent strong potential that exists in the region, several LCCs have tried and failed to successfully implement their low cost model in SSA, such as Fly540 (MRO Network, 2014). It is unclear whether factors responsible for this contradiction are simply insurmountable, or can be overcome.

1.3 Objectives

The research objectives pertaining to this study are:

- To establish the factors, both market related and airline specific, that are primarily responsible for the success of LCCs in markets where they are well established.
- To establish the factors, both market related and airline specific, that are likely to have a profound effect on the chances of success for LCCs in the SSA region.
- To determine the degree to which the critical success factors identified for LCCs in well-established markets compare with the critical success factors for LCCs in SSA.
- To propose a business model for increasing the likelihood of success for an LCC operating in SSA.

1.4 Research Question

What is required to adapt the typical LCC model used successfully elsewhere in the world for a LCC to operate successfully in the SSA market?

1.5 Research Propositions

1.5.1 Proposition 1

The factors that are critical to the success for LCCs in developed markets such as Western Europe, US and Asia differ to some extent from developing markets, and in particular SSA.

1.5.2 Proposition 2

There are SSA specific factors that are likely to affect the success of a LCC in the region both positively and negatively.

1.5.3 Proposition 3

A unique business model, adapted to the specific conditions in SSA is required in order for a regional LCC to prove as successful as several have in more developed LCC markets such as Europe, the US and other emerging markets.

1.6 Assumptions

In undertaking the research, the following assumptions have been made:

- Industry leaders interviewed are assumed to be experts on the subject matter, given their industry experience and positions they hold at airlines in SSA.
- Southwest Airlines, RyanAir and Easyjet are deemed to be market leaders in their respective markets given how they have effectively applied the LCC model. Key attributes which are found to be common to all three of these airlines, will be assumed to be critical to all LCCs, regardless of the market in which they operate.
- India and Mexico have remarkable similarities with SSA, and it is assumed that critical success factors identified in these two countries could largely be applied to SSA.

1.7 Significance of the study

Whilst a significant amount of literature relating to more developed LCC markets exists, the African and, more specifically, the SSA LCC market remains largely untapped. Certain studies have been undertaken to explore the potential for LCCs in developing markets or to establish the benefits that air connectivity would have on the African continent. There is however, limited research into the reasons why, to date, LCCs have failed in the region or how such obstacles could be overcome. There is therefore a distinct gap in the research relating to LCCs, and there exists a need for a study that seeks to identify the factors that are critical to the success of an LCC in SSA. This study endeavours to address this gap by identifying the critical success factors at play and applying them to the peculiarities of the SSA market. In essence, what are the critical success factors for a LCC in general and can these factors be adapted to ensure success in the SSA market.

1.8 Structure of the Reports / Paper

The content to follow is separated into 8 chapters, the first of which is Chapter 2 which focusses on the existing literature which pertains to the study at hand. This chapter first describes the aviation sector in general, before drawing on both market and airline specific factors which are likely to impact the outcome of the study. This is followed by Chapter 3, containing two case studies on LCCs in India and Mexico respectively, providing real-world examples of LCCs in developing markets. Chapter 4 then provides three theories pertaining to airlines, and the manner in which these theories can be utilised to analyse the results of the study. Following that, Chapter 5 describes the research methodology utilised, pertaining to the data collected, and the manner in which it was analysed and applied. Chapter 6 then describes the results of the exercises undertaken, which include the survey, ticket comparison study, fuel cost analysis and one-on-one interviews. Following that, an analysis and discussion pertaining to the results in the previous chapter is provided in Chapter 7. Chapter 8 provides concluding remarks and recommendations. The Appendices follow.

2. Literature Review

This chapter draws on a selection of the existing literature relating to the global aviation sector, more specifically the SSA aviation market, and its participants, being both legacy carriers and LCCs. Furthermore, the generic LCC business model is described, looking to address the factors which tend to affect the success of LCCs in other markets, and how they might apply to the SSA region.

2.1 Global Aviation market

According to Boeing (2013), the global aviation market is a highly dynamic industry which is constantly adapting and adjusting given many different market forces. Factors such as fuel prices, economic growth other modes of transport, emerging markets, environmental regulation and market liberalisation, to name but a few, are constantly altering the manner in which the industry operates. Market participants, and particularly airlines as the dominant players in the industry, have to constantly monitor and alter their respective business models requiring regular intervention. Overall in 2012, passenger traffic grew at a relatively strong 5.3 percent year-on-year, with industry wide load-factors reaching 79.1 percent. The US and Asian markets displayed the strongest profits as overall airlines earned $7.6 billion (Boeing, 2013).

Forty-two aviation mega-cities exists globally according to Airbus (2013), and these cities remain the epicentres of global aviation travel. That said over the next twenty years another forty nine cities are expected to enter this elite group (Airbus, 2014). Economic and population growth, as well as disposable incomes are expected to have a major impact on travel trends in the coming years, this especially so as aviation travel becomes increasingly accessible to people from all parts of the globe. As emerging markets continue to offer the strongest growth prospects globally due to emerging middle classes which are expected to double globally over the next twenty years, trends are displaying somewhat of a shift in global air travel from traditionally strong markets in developed economies, to developing ones (Airbus, 2014). While this is expected to take several years before a significant shift occurs, strong signs have already emerged, especially as tourism statistics, a major factor in driving aviation growth, support movement to previously underserviced markets (Airbus, 2014).

2.2 Sub-Saharan Africa (SSA) Aviation Market

According to OAG (2012), a consultancy owned by UBM Aviation, South Africa remains by far the most developed aviation market in SSA being home to South African Airways (SAA), the continent's largest airline. South Africa also boasts a developed domestic market, being serviced by six domestic airlines, four of which are LCCs with two legacy carriers also operating. Followed by Nigeria, Kenya and Ethiopia, South Africa saw nearly 13 million passengers travel through it in 2012, while Nigeria recorded less than half of that which indicates that the gap remains relatively large. Further, while Nigeria no longer has a national carrier, the national carriers of South Africa, Kenya and Ethiopia accounted for 30% of the total African airline market share in 2012, and adding the airlines operating in South Africa's domestic market, this accounts for a further 17%. Therefore almost 50% of the entire market share held by African airlines in 2012 was accounted for by airlines originating from these three countries.

InterVISTAS (2014) undertook a study for IATA, whereby they displayed that in countries in Africa where liberalisation of air markets had taken place, substantial benefit was realised. According to this study, in the early 2000s, the route between Johannesburg (JNB) and Nairobi (NBO) saw a 69 percent rise in passenger traffic, while allowing an LCC to operate on the route between South Africa and Zambia resulted in a 38 percent reduction in fares and a 38 percent increase in passenger traffic. Further, Ethiopian airlines has benefitted substantially from its home country having a more liberalised policy with respect to bilateral air service agreements (BASAs), seeing the airline becoming one of the largest and most profitable on the continent. Ethiopians benefit from 10 – 21 percent lower fares and 25 – 38 percent higher frequencies.

Genesis Analytics (2006), mentions that despite the many international agreements that remain in place and serve to open up air travel between the rest of the world and SSA, regional and domestic markets continue to suffer due to lack of cooperation between the region's players. This has fostered an environment where many small, non-viable, state owned airlines continue to fly unabated while being subsidised at the expense of viable private carriers. At a domestic level, while some countries have liberalised domestic markets to some extent, the most successful of which has been Tanzania, many domestic markets remain highly regulated. Competition between private carriers in Tanzania has flourished, benefitting passengers, and the market overall. Genesis Analytics (2006) further predicts that full liberalisation of the South African Development Community (SADC) would

reduce airfares by 18-40 percent, as LCCs would enter the market, increasing volume by 20 percent. In addition, another 500 000 tourists would arrive by air each year, spending more than $500 million in the region.

Foster et al. (2010) alluded to how air transport in SSA remains expensive by international standards. Due to high landing charges and lower volumes, such costs are usually passed onto the passenger. Furthermore, government support of state owned carriers creates unfair competition and hinders efficiencies in the market, while lack of competition on regional routes, a function of a lack of liberalisation, keeps ticket prices relatively high.

While several small LCCs operating both regional and domestic routes exist, their share remains somewhat insignificant according to the CAPA Centre for Aviation (2013). In 2013, LCCs accounted for approximately 11 percent of total seat capacity in Africa as a whole, this compared to a 37 percent penetration rate in Europe, 30 percent in the US, 34 percent in South America and 24 percent in the Asia-pacific region. The figure in Africa includes North Africa, and hence with that part of the continent being better represented by LCCs, the figure in SSA alone is somewhat lower. While the LCC Fastjet has made significant inroads into the continent, the region's largest LCC remains a foreign carrier being FlyDubai, which competes through a hub-and-spoke type network, yet offers low cost linkages to various locations in Africa and the globe.

Shlumberger and Weisskopf (2014) focuses somewhat on the regions most integrated area, the East African Community (EAC), which is a regional economic community formed between five East African countries namely Uganda, Tanzania, Rwanda, Burundi and Kenya. The region covers an area of 1.82 million square kilometres, and contains a total population of 141.1 million people, as per 2013. According to the authors, there are a few, high frequency routes, both domestically and regionally which makes up a large majority of the overall traffic in the region. As of 2013, there were 15 – 17 return daily flights between Nairobi and Mombasa in Kenya, displaying the significant demand that exists. Similarly in Tanzania, high frequency occurs between Dar Es' Salaam, with Mwanza, Kilimanjaro and Zanzibar, connecting the economic hub with these three tourism centres. As far as regional / international routes are concerned, the busiest regional routes are between Entebbe and Kigali, Kigali and Bujumbura, as well as flights to Mombasa and Zanzibar from cities outside of Kenya and Tanzania respectively. Intra-EAC traffic however is heavily dominated by a limited number of carriers and competition remains extremely limited.

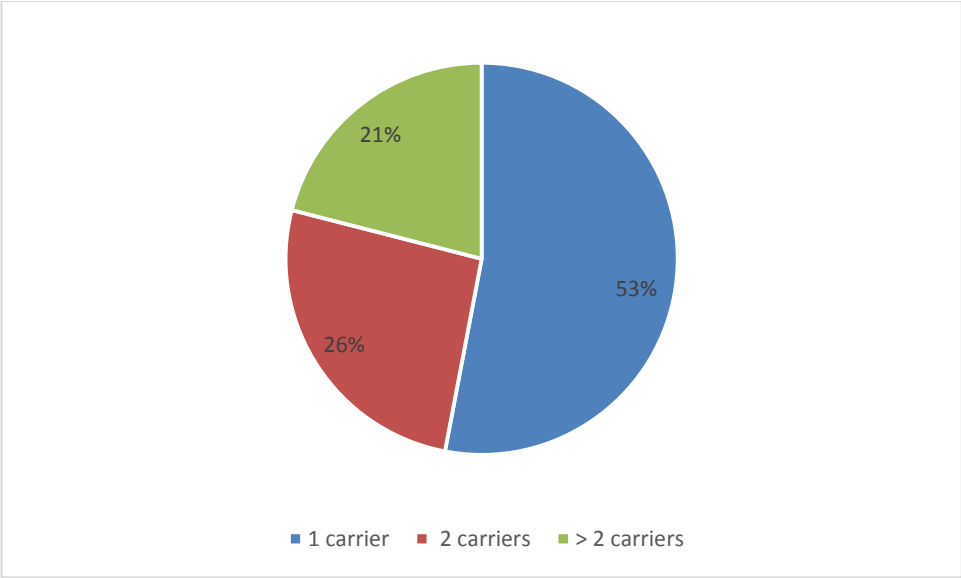

Figure 1: Number of Carriers serving major EAC routes, July 2013. (Schlumberger and Weisskopf, 2014)

Overall, Boeing (2013) remains highly optimistic with respect to African aviation growth in the medium term, particularly as SSA weathered the global recession of 2008 / 2009, with long-term economic growth of 4.4 percent being well above global averages. Further, air-traffic demand is expected to grow at 5.7 percent annually, outpacing global figures as the flexibility offered by aviation networks is likely to be exploited, offering a relatively low cost per network kilometre compared to other modes of transport requiring significant investment in infrastructure.

2.3 Alternative Forms of Transport

Ruske and Kauschke (2013) state that while SSA may be viewed as one large homogenous region by some, connectivity between its fifty two countries is extremely low. The terrain also varies greatly from desert to rainforest, generally affecting critical transport infrastructure such as road networks or rail. Most travel occurs via roads which remain largely unpaved and in poor condition, save for South Africa, with Kenya, which scores only second to South Africa in terms of road quality, only having 14% paved roads. Road quality tends to deteriorate even more as one leaves major metropolitan areas. According to the authors, In Nigeria, SSA's most populous country, roads carry over 90% of both people and freight despite regional roads being in a state of disrepair. While certain trans-SSA highways exist, such as the Lagos-Abidjan highway, road quality is below par, while some other highways which do exist, remain unusable. Further the authors observe that as far as rail is concerned, general conditions on the continent are dire. Many rail networks remain remnants of the colonial period, and while East Africa is seeing investment in new inter-

country rail links, such as between Tanzania and Rwanda, and Kenya and Uganda, such activity in West SSA is non-existent. It remains a herculean tasks to coordinate transportational integration on the continent given both massive funding requirements and a lack of political will and cooperation between several countries. Furthermore, with many countries in SSA remaining land locked, the situation is even more dire.

According to the World Bank (2011), more than half of all migration in East Africa occurs within the region. While data supporting this can at times be inconsistent from country to country, such migration does occur, and is supported by economic, educational and political factors. Schlumberger and Weisskopf (2014), mention how through the EAC Treaty, the free movement of labour has been accelerated, particularly from smaller, historically less politically stable countries such as Rwanda and Burundi, and there is therefore substantial communities from both Rwanda and Burundi in neighbouring Uganda and Tanzania. High levels of migration have also been witnessed between Uganda and Kenya. The vast majority of visitors to Rwanda and Uganda, and to a lesser extent Tanzania, still enter the country utilising land transport in the form of cars and buses. Figure 2 below shows the breakdown across the four countries, relating to the mode of transport utilised.

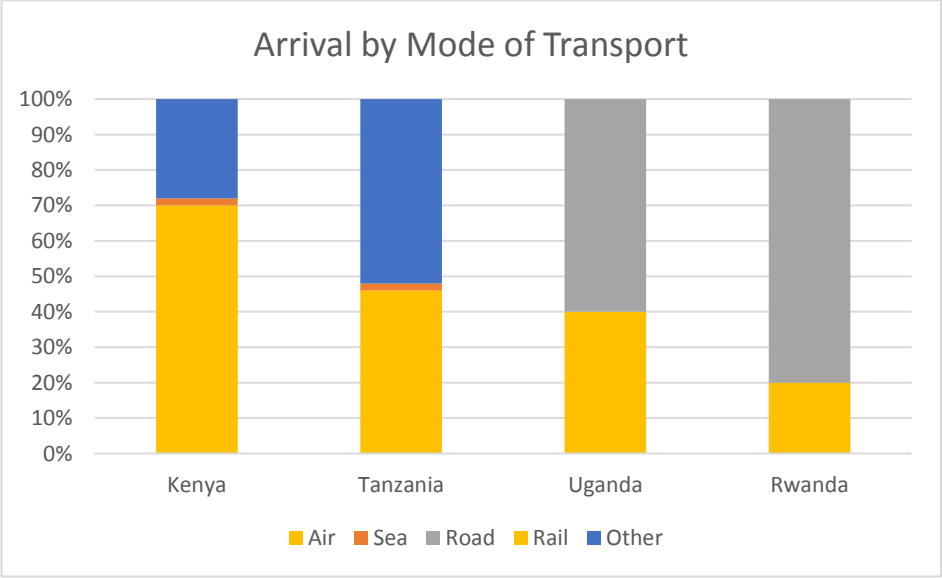

Figure 2: Arrival Mode of Transport (Schlumberger and Weisskopf, 2014)

Shlumberger and Weisskopf (2104) looked at Rwanda in more detail, where in 2011, 61 percent of all tourism arrivals into the country occurred via land transport. By delving deeper, and looking at cost, efficiency, safety and reliability, one is able to better understand whether ground transport is likely to be replaced if certain alternatives are offered. In the EAC up to 80 percent of regional roads are in fair to good condition, and

apart from Uganda, most countries have relatively good maintenance records (Schlumberger and Weisskopf, 2014). Often with the assistance of foreign aid and development organisations, these countries have been able to maintain a relatively decent standard of roads. Roads in rural parts of the region are however in in far worse state, with over 50 percent of rural roads in Uganda being of low quality, whereas in the other countries this figure is slightly below 50 percent. That said, car ownership and usage statistics in the region are low at 0.5 cars per 1,000 inhabitants as of 2007 compared to the US at 423 car per 1,000 or 457 in the UK in 2007 (Schlumberger and Weisskopf, 2014). This supports the reasons why buses or trains are utilised travelling regionally utilising ground transport, such services being provided by many bus operators offering linkages between the region's major cities. Other companies have been particularly focussed on tourists, connecting people from Nairobi to places such as Kilimanjaro, charging approximately $20 for a one-way trip. Safety however is of major concern, with the WHO estimating that 8,484 people were killed on Kenyan roads in 2010. This is a death rate of 20.9 per 10,000, compared to the US and UK where cars usage is significantly higher, and death rates are 1.4 and 3.7 per 100,000 respectively.

Table 1 below displays a comparison of bus travel times versus flight times for several routes across EAC.

Table 1: Bus versus flight times for several routes in SSA

Route	Bus time (hours)	Flight time (hours)
Nairobi-Mombasa	8	1
Nairobi-Kampala	12	1,13
Nairobi-Dar es Salaam	13	1,42
Nairobi-Kigali	24	1,37
Entebbe-Kigali	9	0,83
Nairobi-Kisumu	5.5	0,83
Dar es Salaam-Arusha	9	1,42

(Schlumberger and Weisskopf, 2014)

2.4 Low Cost Carrier (LCC) versus Legacy Carrier

Binggeli and Pompeo (2002) describe the typical LCC model which has proven so successful in Europe and the US, which includes, but is not limited to, the utilisation of one type of narrow-body aircraft with one passenger class, maximising load-factors, not providing reserved seating, no flight connections, and internet based bookings making up a large

majority of all reservations. Vidovic (2013) compares the business model of a legacy carrier, to that of an LCC, which can be summarized as follows:

- LCCs typically utilise narrow-body jets as opposed to the wide-body aircraft used by legacy carriers for long haul flights;
- Legacy carriers have a wider geographical coverage, including domestic, intra-continental and long haul flights, with a particular focus on utilising a home country base;
- Legacy carriers tend to adopt a hub-and-spoke network rather than the LCC's point to point network;
- LCC's utilise secondary airports where possible, whilst legacy carriers establish themselves at major airports;
- Legacy carrier offer a wider range of destinations with a higher frequency of flights;
- Legacy carriers offer a range of passenger classes with a high level of service throughout; and
- Legacy carriers practice complex yield management with a much larger range of prices within each seating class.

Table 2: LCC compared to Legacy Carrier Business Model

	LCCs	Legacy Carriers	Advantage of LCCs
Utilisation	Short stops at airport (approx 25 min)	Prolonged stops (approx 45 min) due to using main more congested airports	Increased utilisation
Additional services	"no frills", additional charges for catering, extra baggage, etc	Entertainment programs, paper tickets, business class, catering	Lower costs, low complexity
Airports	Secondary and regional airports	Main "hub" airports	Lower landing and airport fees
Fleet	Standardised fleet with high density seating	Different types of aircraft, lower density seating	Lower maintenance and training costs
Ticket Sales	Direct channel sales with agent costs passed onto passenger if essential to use this type of distribution	Travel agencies and ticket offices	Lower distribution costs and less complexity
Connections network	Direct, point-to-point, short haul	Longer haul and indirect flights	Reduced complexity with connections, higher utilisation
Personnel	Large variation in salary	High base salary. Worker unions	Lower fixed costs of employing staff

(Vidovic, 2013)

Showing one particular example, O'Connell and Jon (2005) mention the manner in which AirAsia transformed from being a regional loss making legacy carrier into a successful LCC

under the direction of an ex-Ryanair director. AirAsia achieves turnaround times of 25 minutes, with a crew productivity level that is triple that of Malaysia Airlines, with an aircraft utilisation rate of 13 hours per day. As a comparison, Air Malaysia achieves turnaround times of one hour, and has an aircraft utilisation rate of 8 hours per day on domestic flights. The example illustrates some attributes that differentiate LCC from legacy carriers in the manner in which they operate.

2.5 Origins of LCCs

Olipra (2012) discusses the origins of the LCC, by drawing on parallels between charter airlines which originated in the 1950s and modern day LCCs, with the former being the early ancestors of LCCs as we know them today. Charters were successful due to their ability to operate freely in otherwise highly regulated markets. By first establishing themselves in home based high demand tourism related domestic markets, and then selectively offering services on regional tourism routes which legacy carriers were not interested in due to seasonality, their business models were both profitable and sustainable. Charters also filled a gap meeting a significant demand for cheap air travel along routes where travellers would otherwise not have utilised this form of transport. That is, by virtue of the fact that tour companies had an interest in the revenues earned from holiday-makers accommodation, car hire and other related expenses, reduced cost air fares could be offered in order to attract tourists to specific destinations, not feasible for legacy carriers who would be required to dedicate regular scheduled services to the destinations without the additional revenue streams.

2.6 Market Factors affecting LCCs

2.6.1 Market Demand

Bhatti et al. (2010), describe how in Europe from 1998 to 2005, passengers utilising LCCs grew from 8 million to 59 million, as a new market of passengers who could not previously afford to fly, emerged.LCCs in Europe have also been successful at attracting business travellers given a safe, reliable lower-cost alternative to legacy carriers. Wharton (2013) presents the case whereby growth in LCC passenger numbers has been exponential in Latin America, a market with a population of 600 million people, and a middle class that grew by 50% in the last ten years, as prior to 2006 it remained largely underserviced as far as

affordable air travel was concerned. Similarly in India, according to Seshadri and Henry (2005), the entrance of Air Deccan, the first LCC, saw the entire market being disrupted, as for the first time ever passenger from India's massive middle class of 150 million people were able to utilise air travel. In a country where 13 million people travelled by train each day, the same amount of people travelled by air each year in the country prior to the entrance of Air Deccan.

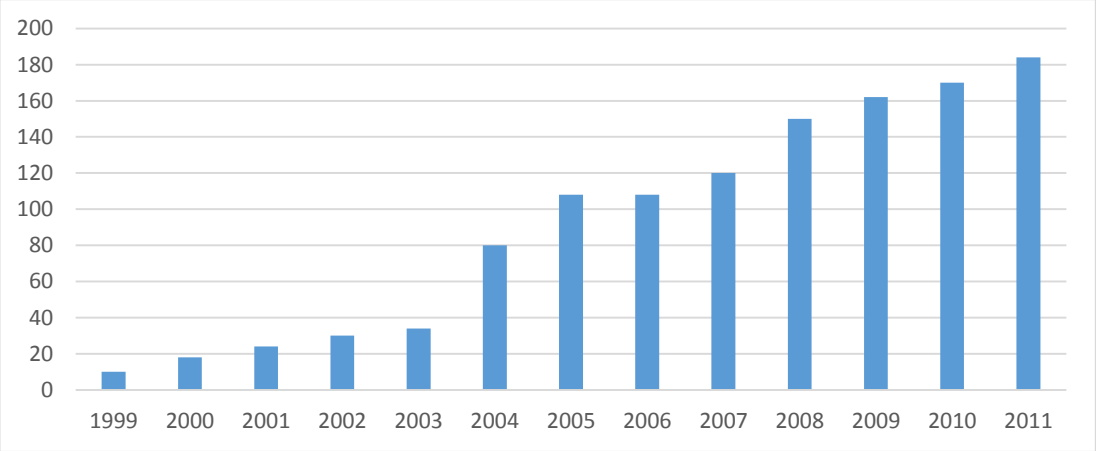

Figure 3: Number of passengers carried by LCCs in Europe from 1999 – 2011 (in millions) (Vidovic, 2013)

Vidovic (2013) showed that in the European market during the early 2000s, only 37 percent of LCC passengers had actually changed their preferred mode of air travel, from having utilised legacy carriers prior to LCCs. The balance of passengers represented new demand from a market that had not travelled before. Of this new demand, 71 percent of respondents declared that they would not have travelled at all, had no low cost option existed.

Bhatti et al. (2010) documented how LCCs have also enjoyed particularly strong growth in certain markets by targeting specific routes and cities that are inadequately serviced by legacy carriers or other forms of transport. In Europe in particular, LCCs exploited the lack of service by legacy carriers and high speed trains to certain cities, or where such services did exist, the existing rail connections were slow (such as in the UK) or were expensive (such as in Germany). In Europe, the number of passengers utilising air travel grew significantly from 8 million in 1998 to 59 million in 2005, with a major contributing factor being the more than fifty LCCs that existed in Europe by 2010.

The Economist (2014) in an article on GoAir, the latest entrant into India's LCC market, showed that even today, in India, one third of GoAir's passengers are small business owners or employees. The alternative to a ninety minute air trip is an eighteen hour bus ride on an

overcrowded vehicle utilising unsafe roads. Furthermore, up until the early 1990s, India's aviation industry was serviced by only two inefficient state-owned carriers. As a result of the deregulation of the industry in 1998, however, private operators began to take hold and several charter carriers were formed, and by 1993, their combined market share had grown to 30 percent (The Economist, 2013). In a country with a population of a billion people and only 15 million air passengers, there was enormous opportunity for LCCs such as Air Deccan to create new demand when the LCC launched in the early 2000s. While much has changed since then, in October 2014, IndiGo, the country's current LCC market leader placed the largest order for aircraft that Airbus (the company which accounts for roughly half of the world's large passenger jets) has ever received being 250 in total (The Economist, 2013).

Wharton (2013) provides a case study on VivaAerobus, where the largest order Airbus has received to date in Latin America was also not from a legacy carrier, but rather from VivaAerobus in 2013. The airline is an LCC specialising in short haul routes between Mexico City, and several regional and domestic locations. VivaAerobus is a joint venture between Ryanair of Ireland, and IAMSA, a large Mexican ground transportation company. The company was established to service Latin America and the Caribbean's large and growing population (currently numbering 600 million) and to exploit the general lack of LCCs in the market. The authors highlight how discount air travel in the region has the potential to grow in the same way that it did in Southeast Asia. As the middle class in the region expands, such opportunities are akin to that seen in Brazil in the early 2000s, where the country went from 30 million air tickets sold in 2002 to approximately 100 million sold in 2012, transforming Brazil into the third-largest domestic market in the world, behind the United States and China (Wharton, 2013). The growth in air travel is directly linked to the economic strides made in Brazil, as the emerging low-middle class increased by approximately 40 million people over a ten year period which was critical to increased demand for regional travel.

The African Development Bank (AfDB) (2011) describes in a report that In more developed LCC markets, and particularly so in India and South America, the emerging middle classes, in each respective country / region, were largely responsible for the significant growth in the low cost sector. The AfDB estimates that Africa's middle class is made up of approximately 350 million people, equal to 34 percent of the total population (Ncube et al., 2011). As per the report published, the middle class were defined as those consuming goods to the value

of between US$2 - $20 per day, which provides a fairly broad range. Yet Standard Bank (2012) notes that this range also includes three sub-categories, the bottom of which is the floating class, who spend just $2-$4 per day yet account for 60 percent of the entire middle class. At the same time Standard Bank (2012) also notes that, eleven SSA countries, when combined, account for half of Africa's entire GDP being Angola, Ethiopia, Ghana, Kenya, Mozambique, Nigeria, South Sudan, Sudan, Tanzania, Uganda and Zambia. The problem however is that some 86 percent of households in the eleven countries mentioned remain in the low-income band, although this figure is expected to improve, falling to 75 percent by 2030. It is expected that between 2014 and 2030 the number of middle-class households will almost triple across the eleven countries mentioned (Ncube et al., 2011).

2.6.2 Competition

Ford (2009) mentioned how in 2009 there were only four LCCs in Europe, yet five years later there were more than fifty. The relatively low barriers to entry and misconstrued belief that profits were easy to come by with the market having no saturation fueled this exponential growth. Nevertheless, according to the author, since 2007, there have been many casualties and bankruptcies, with Ryanair the darling of the LCC sector, even issuing its first profit warning that year as its shares slid 30 percent. EasyJet, the other large player in the European LCC market similarly downgraded forecasts that year seeing its shares sell off 25 percent. Other LCCs however were not able to weather such unfavorable business conditions, as Duo became the first British LCC to go into administration in 2007 while in the same year KLM's Buzz was rescued by Ryanair in the eleventh hour. Ryanair and EasyJet however, despite issuing profit warnings, looked to step in and increase capacity where possible, snapping up casualties where it made sense to do so. This strategy proved to be highly successful leading to above market rate growth while eliminating competition at the same time.

Binggeli and Pompeo (2002) are of the opinion that an even larger threat to LCCs is legacy carrier adopting a low cost offering on certain short haul routes. By virtue of a lower cost structure, which has been ring-fenced on those routes, it can justify the lower ticket prices. British Airways (BA) under threat from Ryanair and EasyJet, turned its loss-making European operations around since 2005, by segregating costs as much as possible, shifting distribution for such flights to the internet, and away from travel agents, while yield management techniques akin to that used by LCCs were adopted for specific routes. This allowed BA to offer fares that were similar to the LCC players yet still profitable on certain

routes (Bingglei and Pompeo, 2002). Nevertheless, legacy carriers need to remain cognisant of whether other legacy carriers are following suit, as the risk of losing business travellers accustomed to certain levels of service can occur if the airline alters its offering too much. Loss of such passengers could lead to excess capacity and under-utilisation of aircraft, and therefore a very delicate balancing act is required. Decisive for an LCC is to have the working capital to sustain oneself through periods of predatory pricing which might be implemented by legacy carriers, yet another highly successful tactic utilised which has been utilised by LCCs particularly in Europe has been differentiating oneself through unique and new routes not being offered by legacy carriers.

According to CAPA (2014), unique to the SSA market is the element of competition posed by hybrid carriers with home bases outside of the region which is not the case anywhere else in the world. One specific example given is FlyDubai, which due to the lack of established LCCs in SSA, has utilised its vast financial resources and economies of scale to enter the African market with success. Its offering includes connections to ten cities in SSA, with plans to expand to many more that are within reaching distance of their narrowbody aircraft. While not a true LCC by virtue of the carrier not offering point-to-point service but rather hub-and-spoke with a business class offering, a passenger can purchase a seat only, which does not include checked baggage or a meal, and ticket prices are substantially less than those on its sister carrier, Emirates, when flying on similar routes. Therefore unique to this market is the fact that the leading lower-cost carrier, as far as passengers carried in the region is concerned, is a foreign based hybrid-carrier.

2.6.3 Load Factors

Achieving high load factors continues to be highlighted as one of the most essential success factors for an LCC regardless of the market in which it operates. According to Binggeli and Pompeo (2002), Ryanair targets largely secondary airports, displaying the lowest cost base of 65 percent below that of a legacy carrier. Based on the estimated cost base of Ryanair, the authors estimate that a profit is achieved if more than 55 percent of the seats are occupied. EasyJet on the other hand operates routes into major airports, and therefore appeals more to business travellers, albeit with a higher cost base than Ryanair, being 40 percent below that of a legacy carrier. It is expected to fill more than 75 percent of its seats compared to Ryanair's 65 percent below, if profits are to be achieved. O'Connell and Williams (2005), on the other hand, recorded that in 2005, AirAsia boasted the world's

lowest unit cost of $0.023 /ASK. Due to this extremely low cost of operation, the airline had a passenger break-even load factor of 52 percent.

A recurring theme in the success of LCCs globally has been the superior load factors exhibited by such LCCs compared to their legacy counterparts. Ensuring that aircraft are always as full as possible reduces unit costs per passenger, as low load factors could prove very costly for an LCC. Such low load factors lead to low aircraft utilisation and mounting costs per passenger resulting in pressure to increase ticket prices. Oilipra (2012), shows the load factors exhibited by Ryanair and EasyJet from 2000-2007 compared to the average for legacy carriers affiliated to the Association of European Airlines (AEA) as per figure 4 below. Successful LCCs have always placed critical importance on targeting high load factors through various techniques given that the consequences of empty planes are far more severe for an LCC versus a legacy carrier.

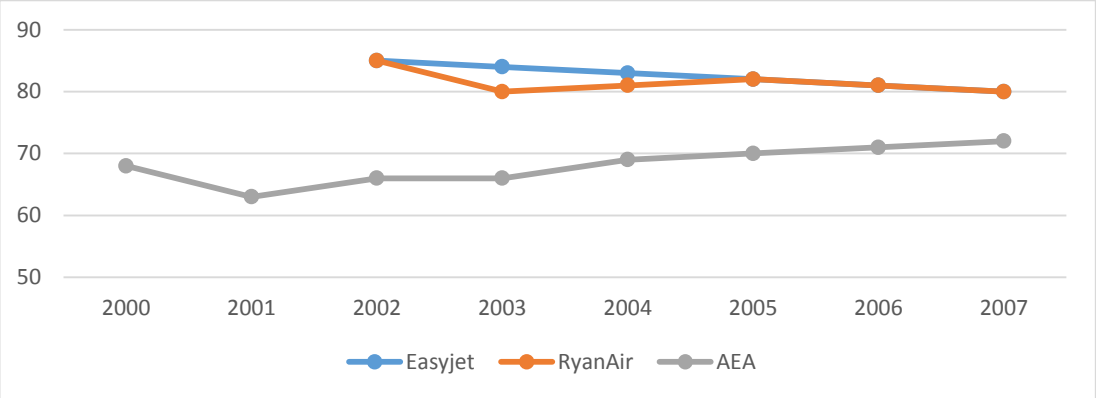

Figure 4: Load factors on intra-European routes in the Period from 2000 – 2007 (Oilipra, 2012)

2.6.4 Secondary Airports and Aircraft Utilisation

Vidovic (2013) describes how costly delays can prove to an airline, reducing aircraft utilisation and potentially leading to loss of passengers due to affected time schedules. Avoiding delays is pivotal not only for the reason mentioned, but if cost savings can be achieved, such reduced costs can be passed on in the form of lower ticket prices. Several practices have been undertaken globally to reduce delays, some of which have become defining features of LCCs. Due to over-congestion at large hub airports, LCCs in Europe and the US in particular looked to smaller, less congested airports to run their scheduled services. The immediate impact of this was less delays and the maximization of daily block-hours leading to higher utilisation of aircraft. The secondary effect of this however was often cost savings due to lower landing fees at secondary airports. When LCCs recognized that cost savings from minimizing delays could have such a profound effect on overall costs,

they explored other strategies to reduce delays even further. By only offering “free-seating” whereby seats are not reserved, passengers are also enticed to board the flight as early as possible in order to secure a seat of preference. Apart from the benefit associated with avoiding delays, much of Ryanair’s model depends highly on the secondary airport approach (Vidović et al., 2013). The airline was the innovator as far as extracting additional revenue from secondary airports is concerned, by attracting co-financing from these airports in exchange for electing to use these airports. As was the case with Cologne and Dortmund airports in the Rhine region of Germany, and Standsted and Luton in the London Area of England, growth of secondary airports and the local economy surrounding them is well documented (Vidović et al., 2013). Airport owners, authorities and local municipalities were cognisant of these direct benefits, and therefore at times have paid to attract LCCs to their airports via either profit shares from all revenues generated at the airport in question or payment in lieu of advertising or promoting these airports to passengers. They therefore saw the LCC as a mechanism to attract tourists and business to the local economy.

2.6.5 Tourism

The European Travel Commission (ETC) (2005) shows that LCCs continue to take the credit for having significantly boosted tourism to many cities in Europe. With LCCs serving many new destinations that were traditionally underserviced by legacy carriers, tourism exploded in cities following the initiation of these new routes. According to the report, in 2005, cities that were traditionally popular tourist destinations, such as Cyprus and Malta, yet were serviced well by legacy carriers saw very little growth, while Barcelona, Valencia and Dubrovnik saw passenger numbers from the UK more than double as these routes were underserviced overall. This became a mutually beneficial situation, as LCCs enjoyed high load factors and utilisation by initiating and promoting these new routes, while the locations similarly benefitted from increased tourism, thereby in turn supporting these LCCs.

O’Connel and Williams (2005) describe the manner in which leisure travelers comprised the vast majority of airline travelers in 2001, making up 85 percent of all tickets purchased. The price elasticity of leisure travelers is estimated to be 2.4, and so a 10 percent fare reduction will cause a 24 percent increase in sales. Business travelers on the other hand are less price sensitive, and the price elasticity of demand for this type of passenger is estimated to be 0.1 displaying a highly inelastic demand. In another study undertaken (O’Connell and Williams, 2005), price elasticity was not constant, with a small percentage fare change

producing little effect while price changes above 20 percent result in large shifts in demand. Furthermore, travelers travelling together in groups are also particularly important to airline revenues as in most instances more than one ticket is sold due to one leisure traveller having booked a ticket. This shows the clear difference between leisure and business travelers, with the latter tending to travel in singularity while leisure travelers often travel in groups. In developed LCC markets, LCCs have been shown to carry more group travelers than legacy carriers, as was shown by the statistic that 40 percent of Ryanair's passengers travel in pairs while 31 percent of AirAsia's passengers are part of a group of three of more (O'Connell and Williams, 2005).

Tourism remains a major driver of LCC traffic in Europe in particular, where LCCs have been the most successful in global terms as shown by Dorsten (2014). Given the benefits of tourism in general, but particularly intra-regional tourism, in recent years, there has been a distinct trend from countries in SSA to attract regional African tourists. One example of a success story in this regard is the 75 percent increase in tourists to Rwanda from 2010 to 2013 which was largely due to an increase in intra-African tourism (Schlumberger and Weisskopf, 2014). In South Africa, one of the most visited countries on the entire African continent, 70 percent of all tourists come from other SADC countries (Schlumberger and Weisskopf, 2014), which displays the potential for other SSA countries where tourism remains highly tilted in favour of tourists from Europe, the US and Asia. Intra-African tourism is also less seasonal, and provides sustained visitors throughout the year. The lack of affordable air travel linkages has been highlighted as a major impediment to intra-regional tourism while visa requirements, whereby the average traveller requires visas to visit 60 percent of the countries on the continent, is another (Schlumberger and Weisskopf, 2014).

Shlumberger and Weisskopf (2014) highlighted a report published by the World Tourism and Travel Council, where tourism in SSA is expected to grow significantly in the coming years. Between 2013 and 2023, international tourist arrivals in Kenya are expected to grow to 2.6 million visitors per annum. Similarly in Uganda and Tanzania, tourism growth is expected to reach 5.6 and 5 percent respectively. Looking at East Africa as an example, tourism remains dominated by European and American tourists, and in Kenya in 2010, almost 50 percent of all tourists originated from five countries being the UK, US, France, Italy and Germany. Data from the Tanzanian National Bureau of Statistics displayed a very similar picture relating to Tanzania in 2012. In recent years, data relating to intra-African

tourism has been collected (Schlumberger and Weisskopf, 2014), and while visitor numbers from nearby African countries has been increasing, what is clear is that the vast majority of these visitors remain business travellers, and only a small percentage of total tourists originate intra-Africa. Significant efforts remain underway to facilitate both intra and inter regional tourism in SSA, with authorities attempting to reduce or eradicate barriers relating to visa requirements and limited transport connectivity. In the EAC for example, the Secretariat coordinated the meeting of its members in 2013, to create a roadmap for a common passport for EAC member citizens. Some progress has been made, however while EAC members have agreed to align their immigration laws and adopt the technology required to integrate their IT system, achieving this goal remains somewhat of a challenge (Schlumberger and Weisskopf, 2014).

According to Thome (2013), tourism remains a major driver of LCC traffic. The African continent as a whole recorded the second highest growth globally as far as tourism is concerned in 2012 with a 6 percent increase. SSA specifically recorded the lion's share of this growth with revenues received from tourism being the highest on record compared to previous years. In the same year, intra-Africa passenger numbers increased by 13 percent driven mainly by increasing trade and a growing middle class. Only the lack of liberalisation and over dependence on bilateral air service agreements (BASA) was holding back this potentially massive market.

2.6.6 Airports and Infrastructure

Gwilliam (2011) indicates that despite popular belief, aviation infrastructure, in general in SSA, remains adequate to support a significantly larger industry. Airport infrastructure is not seen to be a limiting factor, with SSA being relatively well endowed with adequate runways and mostly adequate terminal facilities. The region is however affected by the lack of modern air traffic control equipment apart from a few select airports, however improvement in this regard is relatively easier to achieve. Of the 2,900 airports and airfields that existed in SSA in 2007, 261 of those received regular scheduled services, testament to the regions ability to support such regular services. While the entire region can boast only three major airports, another forty medium sized airports remain connected to large cities and serve both international and domestic traffic. On the other hand, more

than two hundred small airports and airfields, of the total 2,900 remain largely non-viable and continue to remain open despite declining domestic travel.

Schlumberger and Weisskopf (2014) show that of the airports providing scheduled services, nearly every single one has as at least one paved runway, and in general taxiways, aprons and jetways only pose minor problems as far as efficient take-off, landing and parking facilities are concerned. Overall airports in SSA do not have primary runway capacity constraints, since if one assumes a five minute separation between flights, a single runway airport could accommodation 144 flights in 12 hours, or more than 1,000 flights per week. With an average assumed load of 120 passengers per flight, this is more than 17,000 passengers a day. Very few airports in Africa come close to this number, and therefore runway constraints are largely non-existent. As far as terminal capacity is concerned, most SSA airports are close to, or only marginally above, their declared capacities. While little data is available to truly assess this, it appears that rescheduling of flights, and minor upgrades to arrival or departure halls would have a significant effect on existing capacities. Looking specifically at the ten largest airports in the EAC, with an assumed five minute time lag between flights, none of the airport in this region have reached their runway capacity. Only terminal capacity has been seen to be a limiting factor in some of the regions busiest airport such as Dar 'Es Salaam and Nairobi. Major terminal expansion projects are however already underway, such as in Nairobi which includes a new terminal, while in Tanzania, ten regional airports are being refurbished while the country's main airport Julius Nyere in Dar 'Es Salaam is building a brand new Terminal 3 moving all domestic flights to Terminal 2 (TradeMark Southern Africa, 2011). As shown in Table 3, 47% of all the airports in SSA are rated either Excellent or Very Good in terms of infrastructure, reinforcing the fact that airports are not a limiting factor for market growth.

Table 3: Airport Ratings in SSA

Rating	Airports (number)	Percentage of total airports	Seats (millions)	Percentage of total seats
Excellent	31	18	67,75	68
Very good	50	29	18,49	19
Fair	46	27	8,51	9
Marginal	10	6	2,29	2
Poor	36	21	2,42	2
Total	173	100	99,5	100

(Gwilliam, 2011)

2.6.7 Labour

Shlumberger and Weisskopf (2014) showed that the availability of well trained and qualified aviation personnel across the entire aviation sector is a major challenge in SSA. This includes pilots, flight attendants, maintenance engineers, technicians and regulatory staff. According to the authors, the reasons for such deficiencies does vary moderately across the region, however primarily it is due to both unsatisfactory training and the all too common “brain drain”, where qualified staff target more lucrative jobs offshore. Middle Eastern carriers in particular have been attracting newly-graduated talent from SSA, offering significantly higher salaries and superior opportunities (Schlumberger and Weisskopf, 2014). Nevertheless, wages for airline crew in SSA are by no means low, and with the current shortages being experienced, salaries have actually doubled from 2008 to 2011 (Schlumberger and Weisskopf, 2014). One advantage however is that in general (and while this again is fairly diverse across SSA) labour regulation is somewhat less onerous and restrictive when compared to other developing markets such as Latin America, the Caribbean, or the countries attempting to attract such staff in the Middle East. Furthermore, with many experienced personnel leaving the region, the training and overall capabilities of pilots and flight crew in particular has been highlighted as a major source of safety problems (Schlumberger and Weisskopf, 2014). Those with superior training or skills can command significantly higher salaries, adding to the operating costs for airlines. Similarly the less competitive salaries which are paid to airport authority or regulatory personnel as opposed to airline jobs adds to the challenges posed to aviation authorities in attracting the right staff to manage their interests in SSA. Given lack of funding in this regard, policies which focus on air safety and the like are often mirrored on the policies of the protected national carrier, creating both a conflict of interest, but also standards that are not objective, nor formulated in line with the interests of the country and other competitive players in the market. Only a more coherent and collective approach by bothmarket participants, governments and authorities can overcome this challenge posed in SSA.

2.7 Airline Specific factors affecting LCCS

Besides market factors, other factors identified in the literature affecting LCCs may be categorised as airline specific and include the following:

2.7.1 Network Type

Donovan (2005) notes that the hub-and-spoke system utilised by almost all legacy carriers certainly has its advantages, yet one of the largest drawbacks of such a network system remains the complexity involved in managing flight connections. In addition, demand patterns are infinitely more difficult to forecast, while the variability of revenue within a fare class is also significant as different passengers on the same flight have multiple points of departure or final destination. LCCs however avoid much of this complexity through offering point-to-point transfers, which allow it to gauge demand more accurately and maximise revenues using simple techniques and system tools.

Oilipra (2012) focusses on Southwest Airlines as the pioneer of point-to-point routes, which actually came about by virtue of trial and error when the airline elected not to move to Houston's newly constructed airport. Rather Southwest remained at the older Hobby Airfield, which was much closer to the downtown area of the city and therefore had its benefits for passengers. The point-to-point route offering attracted a flurry of new travellers where the convenience associated with the airport's location provided significant benefits to a large proportion of travellers.

2.7.2 Cost Minimisation

LCCs in much of the literature have been able to exhibit considerably lower cost per seat-mile than legacy carriers, generating profits at lower fares and load factors according to Rubin and Joy (2005). Southwest Airlines breaks even when its load factor is only 60 percent, compared to the 90 percent requirement for legacy carriers in the US. The combination of non-unionised labour force, smaller more fuel efficient aircraft and quicker turnaround times contribute overall to this significantly lower cost overhead (Rubin and Joy, 2013). Similarly Flouris and Thomas (2005) describe Southwest Airlines superior performance versus its peers in the US market as being based on achieving a lower, more flexible cost structure, allowing it to breakeven at lower load factors, while being able to react to a changing environment more quickly than its competitors.

Cost reduction strategies undertaken by LCCs have been shown to reduce operating costs per seat kilometre flown by 35 – 60 percent versus legacy carriers (Bingglei and Pompeo, 2002). European LCCs when first establishing themselves on the continent offered fares at 50 to 70 percent lower than legacy carriers due to higher seat load factors and reduced costs. The significant difference in price was highly instrumental in attracting price

sensitive leisure travellers, however lack of convenience and flexibility often doesn't lend itself to meeting business traveller's requirements.

Vidovic (2013) adds that in Europe in particular during the 1990s and early 2000s, when a LCC entered any market previously underserviced by such carriers, they were often able to achieve cost savings of up to 50 percent versus full service carriers. As legacy carriers have become more frugal in recent years and managed costs far better, this is often no longer the case, even in new markets that are still underserviced by LCCs. The effect of the global credit crisis and reductions in air travel demand due to terrorism has seen many legacy carriers undertaking significant overhauls of their cost bases. The cost advantage a LCC might now have over a legacy carrier flying similar routes is not as superior as before. LCCs have therefore been forced to continuously and dynamically change their business models to retain a cost advantage while continuing to differentiate through other means. In more mature markets, LCCs have focused on other means of costs savings, such as mergers with other airlines to achieve cost savings, while also employing innovative revenue streams, improved customer service and even experimenting with longer-haul flights (Vidović et al., 2013).

Vidovic (2013) further discusses one of the key traditional differentiating factors of the LCC models being a low cost approach, of which success depends on its ability to achieve significant cost savings by focusing on several primary points. These include:

- seeking to achieve maximum efficiency at all times;
- using younger, uniform and more fuel efficient aircraft;
- servicing secondary, less congested airports;
- scheduling point to point flights;
- selling tickets through online channels;
- creating one passenger class; and
- offering no in-flight service

Table 5, indicates the percentage cost reductions that can be achieved by an LCC (when compared to the ticket price of a full service legacy airline) by undertaking certain cost cutting measures. The cumulative reduction in costs is seen to go as low as 49 percent below that of a legacy carrier, being a significant cost reduction.

Table 4: Cost reduction areas for LCC versus legacy carrier

	Cost reduction (%)	Cost per seat
Legacy Carrier		100
LCC		
Operating advantages		
Higher Seat Density	-16	84
Higher aircraft utilisation	-2	82
Lower flight and cabin crew costs	-3	79
Use cheaper secondary airports	-4	75
Outsourcing maintenance/ single aircraft type	-2	73
Product/service features		
Minimal station costs and outsourced handling	-7	66
No fee in-flight catering, fewer passenger services	-5	61
Differences in distribution		
No agents or GDS commissions	-6	55
Reduced sales/reservation costs	-3	52
Other advantages		
Smaller administration and fewer staff offices	-3	49
LCC compared to legacy carrier		**49**

(Vidovic, 2013)

Shlumberger and Weiskopf (2014) show that in general, due to lack of competition and the reduced economies of scale, aviation costs in SSA are relatively higher than many other regions in the world. While high costs relating to airport charges in particular can pose a significant challenge to LCCs in SSA, across the entire region, the authors find that both the magnitude of these charges and type of charges can differ significantly from country to country, and even from airport to airport (Schlumberger and Weisskopf, 2014). Costs can be separated into those airlines pay, such as landing charges, parking and security, and those paid by passengers such as third party taxes and fees charged by the airports authorities or government. In conducting a comparison between airports of similar size in developing countries, being both in Africa and globally, with respect to total costs for regional / international short haul flights, the authors established that some airports in SSA

actually charge significantly lower airline charges than fellow African and certain Asian and Latin American airports. Figure 5 below depicts these differences.

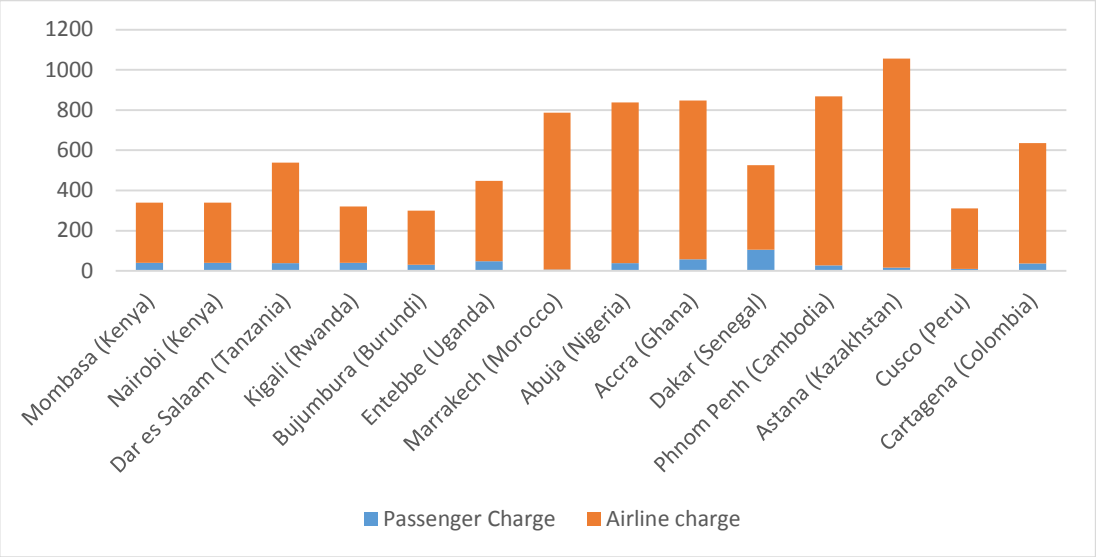

Figure 5: Total Charges for Regional Flights in USD (Schlumberger and Weisskopf, 2014)

2.7.3 **Ticket Distribution**

With internet penetration in the US alone having been 160 million people in 2002, the advent of direct airline ticket sales, for both legacy and LCCs revolutionalised the manner in which the sale of airline tickets took place (Rubin and Joy, 2013). The authors indicate that in 2002, 39 million people in the US booked their air travel using the internet, a 25 percent increase from the previous year. The authors further state that for Southwest, a ticket sold through a travel agent costs the airline $23, while a ticket sold through the internet costs only $6, resulting in a two-thirds saving. In addition to the cost savings achieved by the airline with internet sales, greater transparency is achieved as consumers are able to compare fares to a greater extent. This transparency in turn creates greater competition amongst airlines, and as consumers are able to better gauge alternatives, as it has been shown by Rubin and Joy (2013), it similarly increases price elasticity which puts downward pressure on prices, and therefore stimulates greater demand.

According to Seshadri and Henry (2005), typical airline global distribution systems (GDS) such as Galileo or Saber, are extremely costly to implement, requiring a deposit that can run into the millions of USD, while a recurring fee of $4-$10 per ticket issued is levied by the system. This fee covers the embedded costs of credit, reconciliation and clearing house charges, yet if an airline is not providing credit to travel agencies, this largely eliminates the

need for this system, while counterparty risk is similarly non-existent, and therefore a clearinghouse service is superfluous. In addition. with a GDS, an airline has to have uninterrupted access to the system in order to issue unsold tickets prior to the flight departing, which creates a situation whereby the airline is at the mercy of the GDS, and cannot operate without the required access. On the contrary, one key universally common feature of LCCs is the almost total reliance on the internet as a distribution channel, which is an advantage for LCCs, as they don't incur additional cost, can monitor flights in real time, and are not reliant on a third party system for flight bookings.

According to O'Connell and Williams (2006), LCCs were primarily the pioneers of online booking systems leading legacy carriers in most markets as they looked to capitalize on cost savings through such systems. While internet penetration levels were significantly higher in the US and Europe than in Asia at the start of the millennium, in 2002, 45 percent of all AirAsia's booking were made online. The airline also supplemented online sales with SMS bookings, and processed 2000 – 3000 messages per month. In conjunction with this passengers were able to book through many outlets which existed at post offices and other news agents (O'Connell and Williams, 2005). The authors further showed that even in countries where the internet is not widespread, evidence shows that passengers will seek out all the available booking channels to access lower fares.

In 2003, O'Connell and Williams (2005) further showed that in 2003 Aer Lingus benchmarked its passenger booking cost against those of Ryanair, and found that there was as much as a EUR 20 difference between the two carriers, with Ryanair having the cost advantage due to the internet booking system it used. In the same year, during the year end 'Google Zeitgeist' survey, which was based on 55 billion searches over the past year which tracked the most popular sites visited, RyanAir.com ranked as the fifth most searched for brand across the entire worldwide web. This is testament to airline passengers desire to access the cheapest and most transparent fares.

Olusegun (2014) provides the results of a survey undertaken by the U.N. Broadband Commission in 2014, where eight of the ten countries with the lowest levels of internet penetration globally were in SSA. The eight countries were Ethiopia, Niger, Sierra Leone, Guinea, Burundi, Eritrea and South Sudan, all with penetration rates less than 2 percent. While 50 percent of the entire world is expected to be online by 2017, only a handful of countries in SSA have reached 40 percent, with most countries' penetration rates being

low. Nevertheless, the survey indicated that mobile broadband, which is accessed by mobile telephones reached 20 percent at the end of 2014, up from only 2 percent in 2010.

Schlumberger and Weisskopf (2014) focuses on the EAC, where Kenya has been a shining performer effectively doubling internet penetration rates from 2010-2014 by investing significantly in ICT infrastructure and in particular fibre-optic cables. They indicate that while the country can boast an internet penetration rate of 28 people per 100, this figure is still far below that of developed countries like the US or UK, and even lower than countries like Thailand and Mexico as indicated in Figure 6 below. According to the authors, while ICT infrastructure is largely to blame, computer literacy also remains extremely low in most of SSA.

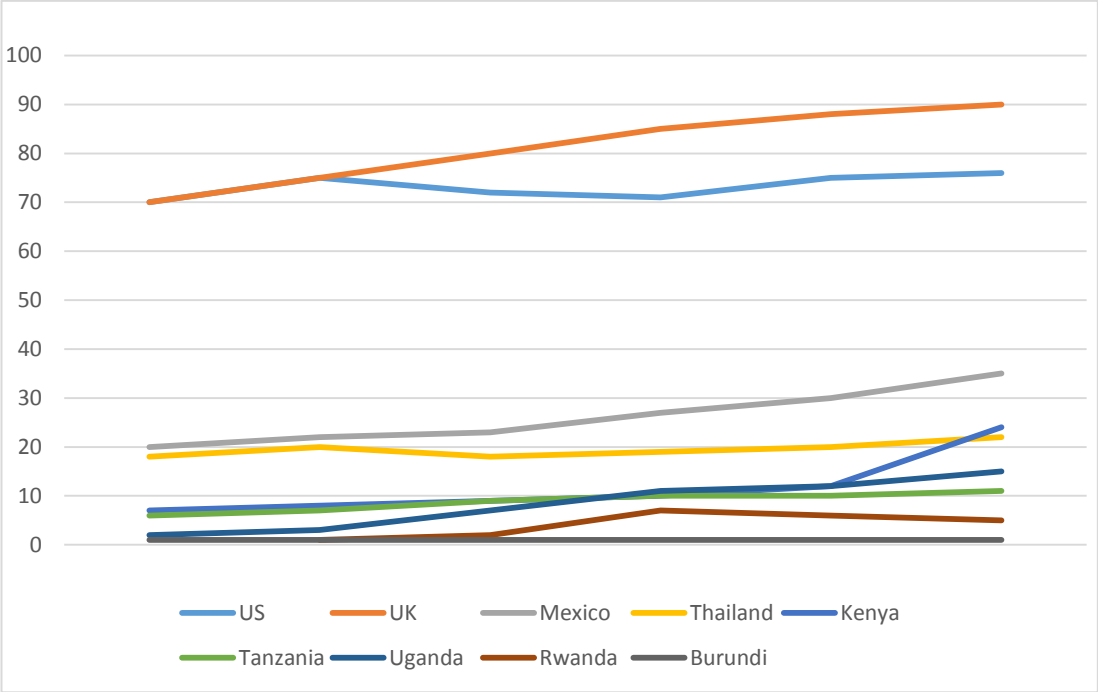

Figure 6: Internet Penetration Rates per 100 people (Schlumberger and Weisskopf, 2014)

Kariuki (2014) described how due to low internet penetration rates, mobile communication has taken off rapidly in SSA, particularly in Kenya. As the cost of mobile devices and their associated usage costs have come down over the last five years, mobile penetration rates have soured. 3G connectivity also continues to be rolled out across SSA, with connectivity speeds which are also highly improved from prior generation technology. At the same time smartphone usage has drastically increased, the release of a $50 smartphone in 2013 provided access to mobile broadband that is faster, more enhanced and user friendly. Similarly, while credit card usage in SSA is low with only 3 percent of the population possessing such cards during 2013, in many countries in SSA, people in general do not hold

banks accounts at all. Mobile payment systems have therefore flourished in the region, whereby users can make payment via their mobile devices, without the need for a bank account (Kariuki, 2014). As a result, the author alludes to the fact that certain counties in SSA have been the global pioneers of such systems, as Safaricom in Kenya developed the M-Pesa payment system which has taken the market by storm since it was introduced in 2007. The airline Fly540 which is no longer operating for other reason, had utilised the system for airline bookings and claimed it offered an almost perfect substitute for credit cards.

2.7.4 Ticket Prices

In a study undertaken in 2002, the average fares of LCCs were 40 – 60 percent lower than full service competitors (O'Connell and Williams, 2005). According to the authors, this translated into Ryanair's fares being on average EUR 50 for a one way trip, earning a reputation for significantly stimulating aviation travel markets. They note that Ryanair however did not simply enter a market and offer lower fares, but rather did so in a more innovative manner utilising well thought out marketing campaigns. One key tactic included the provision of many free tickets to its passengers, a strategy which proved to be highly successful. For example, in 2003, a number as high as 100,000 tickets were given away as the airline celebrated the opening of a new base. Later that year, it issued another 70,000 free tickets to celebrate carrying 70,000 more passengers than its closest competitor, EasyJet. It later issued another 27,000 seats to celebrate 27 consecutive weeks of being more punctual than EasyJet. O'Connell and Williams (2005) continue that this trend persisted for several years, and while it came at a significant cost, this was considered to be a major part of the marketing budget. In their view, at the time, such a strategy had a major impact on passenger perceptions as despite seats not necessarily being free when one attempted to book, the airline was always viewed to be extremely low cost, so much so that tickets were sometimes free.

2.7.5 Yield Management

American Airlines is considered to have been the pioneer of revenue management, or better known as yield management in the airline industry having undertaken the practice in 1985 as shown by Huefner (2011) . When low-cost players entered the market and threatened to take passengers from larger legacy carriers, the airline did not try and compete on a price basis, but rather sought ways to only reduce pricing for certain

passengers while still selling full prices tickets to passengers who were less price sensitive. This strategy proved to be highly successful when undertaken according to a precise strategy utilising thorough market analysis.

Alderighi and Piga (2010) undertook a study in 2010 which the results showed that there are three types of passengers with respect to the booking of airline tickets, in general. Very early bookers tend to have concrete travel plans in place hence the reason for booking early, and therefore little flexibility. This makes their demand somewhat inelastic, and they are willing to pay a moderately higher price to secure a seat. Early-intermediate bookers are those who have a more flexible schedule, and would tend to shop around across different departure dates, times and even locations to save cost, making their demand more elastic. Lastly, last-minute bookers are those with the least flexibility, hence highly inelastic schedules and willing to pay a premium.

Whitelegg (2005) states that yield management is a technique practiced by airlines which involves selling each and every seat at its optimal price, delicately balancing supply and demand to ensure maximum return. Similarly, Donovan (2005) describes yield management as a technique which allocates limited resources among a variety of customers in order to optimize the total revenue or "yield" on the invested capacity. This is explained further by Donovan (2005) that in such a case, the limited resource is seats, with the customer types being both business and leisure travelers. An airline seat is somewhat like a fresh food that spoils after a certain period of time, as the aircraft departs, all the empty seats become worthless and so this technique depends on selling the right seat to the right customer at the right time for the right price. Yield management effectively manages the balance between selling discounted tickets which would fill up an entire plane, and full fare tickets which maximize revenues yet leave seats empty. The author continues that one important characteristic of airline seats however, is that despite becoming worthless in an instant at departure time, seats can be sold in advance. With each seat having a low marginal cost, it is preferred to sell the ticket rather than let it go to waste, as the accompanying revenue far outweighs the cost of producing the item. Airlines therefore create booking rules between the market segments, such as a Saturday night stay is required in order to obtain the discounted fare. This attracts price sensitive travelers who might be more flexible and travel over a weekend versus business travelers who are not and likely only travel during the week (Donovan, 2007).

That said, the manner in which legacy airlines practice yield management is vastly different to that of LCCs, with the former, looking to maximize revenues through complex pricing strategies to fill all classes of seats. LCCs on the other hand look to create hype and demand, by starting ticket sales at a very low price, increasing through various pricing levels as the departure date draws closer. Malighetti, Paleari and Redondo (2008) state that the success of any LCC depends on the delicate balance between fare levels, load factors and operating costs. That is, the structure of revenues and the manner in which prices are determined are nearly as vital as the minimisation of costs.

2.7.6 Aircraft

Vidovic (2013) highlighted a trait common to many successful LCCs which has been the widespread use of younger, homogeneous medium sized aircraft such as the Boeing 737-700/800 or Airbus A319/320. These aircraft result in lower fuel, maintenance, personnel and capital costs when compared to larger or older aircraft. Nevertheless in his view, the choice whether to utilise new or old aircraft is highly dependent on the market itself. In highly competitive and developed LCC markets, carriers that have had the benefit of being well capitalised have in almost all instances purchased new aircraft. The author explains that by placing relatively large orders for new aircraft with the manufacturer directly, volume discounts are often secured. After a few years of operation, either these aircraft are then sold in the second hand market, or alternatively the airline enters into sale and leaseback transactions, allowing then to recoup some capital yet continuing to operate with relatively young aircraft, lowering the overall cost of ownership quite significantly. Furthermore, Vidovic (2013) considers the example in India and other Asian markets with large populations where LCCs have entered with a flurry due to large strong economic growth. In such markets, operating brand-new aircraft over long sector lengths is standard practice for an airline looking to compete with other carriers. For longer sectors, where a low fuel burn has a larger effect on the operational costs, the aircraft of choice are younger in most cases. According to the Author, in the European and South East Asian markets, nearly all new and existing LCCs have utilised very young aircraft given the competition that exists in the low cost sector while in less competitive markets, and where sector lengths are short or when first mover advantage is crucial, the strategy has been somewhat different. Older aircraft have been utilised with some success, despite being more expensive to operate (Vidović et al., 2013). A sound business model business model can certainly make it possible for a carrier with older aircraft to operate successfully.

Trubbach (2013) shows how market power is also a strong determinant of whether an airline should acquire brand new or second hand aircraft. Noting that, it has been estimated that Ryanair, due to its market power, is able to negotiate very significant discounts paying around 50 percent of the full price at $42 million for a brand new B737-800. Further, it is estimated that the depreciation on an aircraft of that type is approximately $1.5 million per year for the first 7 years, losing $10.5 million of its value during this time. The author argues that a carrier that purchases this aircraft, will in effect be paying three quarters of the price that Ryanair paid, albeit for an aircraft that is 8 years old, with higher maintenance and running costs. On the other hand, leasing aircraft is traditionally more expensive in the long run despite the short term cost savings. For example it is estimated that Spirit, the North American LCC paid between $3.5 and $4.0 million USD per aircraft for its fleet which consists of 100 percent leased aircraft, a significant sum to pay despite the relatively young age of its fleet being 4.6 years (Trubbach, 2013).

Trubbach (2013) also described how the fleet strategy of small LCCs is somewhat similar to that of small legacy carriers, where having brand new aircraft brings about little cost saving which is outweighed by the significant upfront capital costs. In his view, purchasing new modern aircraft come with significant funding requirements, and the likely pressure this places on a smaller airline is better avoided in most cases. On the other hand, he argues that the requirement for new aircraft is usually disparate between large LCCs and large legacy carriers, noting that the fleet utilisation of large legacy carriers is often fairly low as they operate schedules which have been optimised around one or multiple hubs. This requires specific schedules that can accommodate large crews and overnight stays away from the home base. He concludes that therefore it might not be efficient to operate a fleet of brand new aircraft as the cost savings are minimal due to lower utilisation of aircraft.

Le Bec (2012), states that outside of South Africa a potential middle class who will fly regularly is small, and therefore load factors in Africa are likely to be significantly lower that other parts of the world. Nevertheless, the consideration taken in this study is that the Brazilian model might be more applicable, where smaller aircraft such as the Embraer are utilised instead of Boeings or Airbuses, looking to fill only 40 – 120 seats, as opposed to 180 seats per flight in an Airbus or Boeing narrow-body aircraft.

2.7.7 Seating Density

By maximizing the seating density on an aircraft, albeit at the expense of comfort for passengers, the overall costs per passenger is reduced as shown by Vidovic (2013). Such a strategy is based on the fact that that fixed costs contribute mostly significantly to overall costs, and while variable costs, such as those relating to fuel do increase as the number of passengers on board increases, the increment is less than the decrease in fixed costs. Therefore overall costs per passenger are reduced as the number of passengers increase.

2.7.8 Ancillary Revenue

Oilipra (2012) discussed how certain LCCs have been successful at not only reducing costs, but actually converting such cost reductions into additional revenue streams. Such examples include inflight catering where snacks and warm meals are provided, but at a cost and at a high profit margin for the airline adding much needed revenues, while similarly selling check on luggage and flight changes can positively impact the top line. Furthermore, many LCCS earn revenues from other ancillary offerings such as selling accommodation, car hire, and short term insurance, while providing advertising space in both traditional and non-traditional places such as seat backs, trays and even the hull of the aircraft add further to revenue streams.

2.7.9 Brand

O'Connell and Williams (2013) highlight the results of a study undertaken in 2003 which looked to determine the most important reasons why passengers, who mostly utilised legacy carriers, did so, and reliability and quality came out as the most important factors. Interestingly, fares were less important when compared to issues such as flight connections. On the other hand, the same survey on customers who utilised LCCs revealed fares as being consistently the most important factor, with flights schedules coming a distant second. This showed the principle difference in passenger's preferences between legacy carriers and LCCs, whereby passengers choose LCCs primarily due to low ticket prices, while those selecting full service airlines do so for the additional service offering. Other studies (O'Connell and Williams, 2005) have shown that perceptions of price in particular are integral in the LCC market, such as in Malaysia where AirAsia is perceived to offer lower fares compared to the full service carrier Malaysia airlines when this isn't necessarily always the case. Thus branding provides a means of product and service differentiation, and LCC brand building is very important regarding brand recognition in any

competitive environment. The same study (O'Connell and Williams, 2005) showed that even if legacy carriers in Europe decreased their prices to the same level as Ryanair, 40.6 percent of passengers would not change, despite an increased service offering and this is due to brand loyalty.

2.7.10 Safety Profile

SSA's air transport safety record remains the worst in the world, a factor which is well known and perceived to be widespread on the continent as shown in a study by Langkilde (2013). The study showed that in 2004, SSA accounted for 22 percent of all accidents worldwide despite only accounting for 4.5 percent of all traffic globally. In 2006, African carriers lost 4.31 aircraft per million departures, compared with 0.65 aircraft worldwide. Another study undertaken by the Interstate Aviation Committee (Foster and Briceno-Garmendia, 2009) concluded that it was not the use of Russian built aircraft in Africa that caused higher than average accidents as it had been insinuated, but rather below standard safety precautions. When western aircraft were used, similarly concerning statistics are revealed whereby fifteen fatal accidents had occurred since the mid-1990s. From the various studies, it is clear that the high accident rate in SSA is a result of poor safety standards and lax supervision, and not operation of Eastern or older aircraft.

2.8 Application in SSA

Binggeli and Pompeo (2002) states that the success or RyanaIr and EasyJet is not easily replicated, noting that the European LCC market displayed losses of almost $300 million from 1996 – 2001, while the US market, excluding Southwest, lost almost $1 billion during the same time period with many players having gone out of business. They contend that, in Europe, Ryanair and EasyJet can account for more than 88 percent of the entire LCC market, while Southwest boasts nearly 50 percent of the US market. In their view, this seems to suggest a trend whereby winner takes all in the LCC marketplace as competition between such carriers is considered to be far more damaging than the competition that exists between legacy carriers, as LCCs exhibit fewer differentiating factors and have smaller margins to utilise as weapons in a price war.

Shlumberger and Weisskopf (2014) in their extensive study which focussed on the potential for LCCs in developing countries, outlined some of the most significant challenges that LCCs are likely to encounter in such markets. Some of the factors mentioned are exogenous to the airlines control, being liberalisation of markets, air traffic control infrastructure and

state protected airlines. Many of the factors mentioned are airline specific, such as aircraft financing, labour and safety. Overall the authors recommend that LCCs choose their development partner or shareholder very carefully, being one who can effectively assist in managing the factors that are beyond their control.

InterVISTAS (2014), argued that the liberalisation of SSA's aviation sector could act as a catalyst to a chain reaction, whereby the intra-African tourism market would be awaken, which would in turn spur on the LCC sector, in turn leading to greater tourism numbers. Projections undertaken by InterVISTAs in their liberalization impact report estimate that liberalisation of 12 countries out of a total of 54 would lead to an increase of more than one million tourists on the continent. Further, one of the major impacts of air traffic freedoms would be more direct journeys, bringing about more routes, more frequencies and eliminating some unnecessary stops which in some cases add three to six hours per trip. As shown in Langkilde (2014), data pertaining to liberalisation that had taken place in other markets supports this notion, with the WTO conducting a study in 2008 that showed that of 184 countries which had open sky policies, on average, air traffic increased by 30 percent in the first year after liberalization. The same study indicates that on the South Africa to Kenya route, this saw a 69 percent increase in passenger numbers, while South Africa to Zambia saw a 38 percent increase. On the latter, fares also reduced by 38 percent due to the entrance of an LCC on this route.

According to Cobb (2005), the high rate of failure of LCCs in certain markets can be attributed to flawed business models. Their study highlighted weak management, inept marketing and under capitalisation as the three key reasons responsible for the flawed business models. They concluded that the business model adopted was absolutely pivotal, suggesting that even legacy carriers would need to adopt elements of the correct LCC model otherwise their fates would be the same as the failed LCCs. Fageda et al. (2010) however suggested that only leading regional LCCs are able to compete with legacy carriers on short-haul routes, and therefore in markets where legacy carriers are well established, any LCC offering needs to be formidable, as far as market power and capitalisation is concerned, in order to ensure success. They suggest that consolidation of smaller players is therefore often a natural occurrence in markets with several large LCC participants being present.

3. Case Studies

3.1 Case Study 1

Seshadri and Henry (2005) presented a comprehensive case study on the LCC Air Deccan, initially describing how at the turn of the century, India's population, being the second largest on the planet at over one billion, comprised of a majority of people with little hope of ever utilising air travel. Of the country's roughly 150 million middle class citizens, only three to four million had ever utilised air travel prior to Air Deccan entering the market.

Air Deccan not only employed traditional cost containment measures adopted by most LCCs, but given the somewhat unique nature of the Indian market, many innovative approaches were required, which proved to be highly successful in this virgin low-cost market. Through all these practises, Air Deccan displayed the highest civil aviation industry growth seen anywhere on the planet. Air Deccan undertook to make air travel accessible to every Indian, and the ticket price of $10 for a one way fare from Bangalore to Delhi, a distance of over 2000km, if purchased early enough, was testament to this. Breaking the perception that air travel was only for the rich was particularly challenging in a country like India which continues to distinguish openly between classes and casts, yet a challenge Air Deccan successfully embraced. If passengers planned well in advance, they could travel many routes for less than the cost of a second hand train fair. That is indeed why in the first few years of operation, 30% of all passengers on most of their flights were first time travellers.

3.1.1 Load Factors

In 2004, Air Deccan recorded passenger load factors as high as 83 percent across certain routes such as Bangalore-Hyderabad, and 100 percent on Bangalore-Goa. Air Deccan chose to lease half its aircraft, and purchase the balance, seeing over thirty aircraft having been delivered prior to its purchase by Kingfisher Airlines in 2007. The airline adopted an approach of targeting small towns in India, as opposed to competing directly against the incumbent carriers at the time, being Indian Airlines, Jet Airways and Sahara. With 75 percent of the country's population having lived in rural areas, such a strategy paid dividends, and saw Air Deccan being instrumental in reopening mothballed airports, many of which had fallen into severe disrepair. Despite this, such airports required significantly

less capital to recommission given their size compared to the large airports in Mumbai and Chennai. In certain instances, the airport was nothing more than a basic structure with thatched roof. Nevertheless, these small airports served their purpose, and allowed rural towns the access to the skies.

3.1.2 Ticket Distribution

Ticket sales and distribution were to some extent a significant challenge, with the majority of potential customers not owning credit cards. Phone booking provided some alternative, with customers able to collect tickets and make payment at one of the several thousand e-ticket collections centres around the country. While agents took a five percent commission in such instances, this was substantially less than commissions paid by larger airlines to travel agents being in the range of 9-10 percent. Rather Air Deccan incentivised ticketing agents to make up the difference through higher volumes. In order to mitigate the risks of bad debts against such agents, they were required to retain a deposit with Air Deccan which was debited once the ticket was issued. This is in essence the existing model practiced between airlines and travel agencies, as the latter retain credit accounts with airlines and only pay them later for ticket sales they have undertaken. Furthermore, by utilising the telephone channel with agents who issued tickets through an internet based system rather than a GDS, expensive payment gateway systems were avoided. The cheapest tickets overall were however offered directly on the internet, enticing those who could do so to access the website to purchase tickets. Air Deccan became the largest e-commerce site in the country through such practices, with in effect 100 percent of its transactions being done on the internet. That is, 50 percent directly by the call centre who essentially booked online on behalf of the passenger, 35-40 percent through travel agents, and the balance at the airport or through Air Deccan offices. The web based distribution system was developed by a Delhi based software company, saving significant sums of money as opposed to utilising the Galileo or Saber system used by most airlines and travel agents around the world. Galileo and Saber require large deposits upfront, in the range of several hundred thousand USD, and then between $4-$8 per ticket, excluding the cost of credit, reconciliation and clearing house fees. Air Deccan however spent a fraction of this issuing tickets through its e-commerce site.

Through the distribution system implemented by Air Deccan, the airline incurred overall distribution costs of around 7-8 percent of the overall ticket price while its competitors incurred between 25-28 percent. Furthermore, Seshadri and Henry (2005) shows that a

large legacy carrier can have outstanding payments above $200 million at any one time on its GDS, which carries a significant cost of credit and reconciliation costs with travel agents. Air Deccan's internet based system effectively made such costs redundant, despite more than 2800 travel agents and vendors distributing tickets for the airline during 2005. Of the roughly $300,000 in tickets sold daily during that year, every cent was received upfront, providing much needed cash flow to the airline.

Air Deccan, through its internet based ticketing and distribution system was able to dynamically track load factors in real time, and then adjust fares appropriately. If a certain flight remained below the targeted load factors as the departure date drew closer, fares would be reduced to stimulate additional ticket sales through special offers. Legacy carriers are constrained by the rigidities of the distribution systems they tend to use as fares have to be announced to thousands of travel agents worldwide through either the Galileo or Saber ticketing systems. Furthermore, through the bespoke internet ticketing system, each and every flight was able to be monitored in real time recording revenues and costs per flight, allowing management to make decisions very quickly to ensure targets were met.

3.1.3 Aircraft

As far as aircraft were concerned, Air Deccan was successful in convincing aircraft lessors to waiver the conventional six-months lease deposit, as their convincing argument of "missing the opportunity to provide aircraft to Air Deccan could mean missing the fastest growing aviation market in the world" was recognised as ringing true. Air Deccan however, in 2004, being less well funded, was able to negotiable very substantial discounts from both ATR (for its smaller aircraft) and Airbus (for its larger aircraft), by having the leasing deposit waived by the manufacturer. Typically, an airline is required to provide at least six months deposit for leased aircraft, however by convincing both manufacturers of the potential in the Indian market, both ATR and Airbus waived the deposit saving Air Deccan $360,000 per ATR and around $1.2 million per airbus alone. .Air Deccan maximized seat density on the Airbus A320s that it utilised, carrying up to 180 passengers compared to the 154 carried by Indian Airlines at the time. This was achieved by doing away with business class or premium sections of the aircraft while using all additional space as frugally as possible.

3.1.4 Costs

Other innovative practices largely unique to the airline brought about unparalleled cost cutting measures. From short turnaround times of fifteen minutes which ensured maximum utilisation per day, to real time monitoring of load factors through the e-commerce site, the airline was able to adjust fares instantaneously. If a flight was empty close to the date or time of departure, reduced fares can be offered online, something legacy carriers cannot do due to system rigidities. Similarly through the same system, profit and losses on each and every flight were closely monitored, allowing for quick decision making. Due to very low passenger traffic levels at some of the smaller airports from where Air Deccan operated, all non-core activities were outsourced. Ground crew were therefore only expected to work for a couple of hours each day at some airports, and outsourcing mitigated idle time associated with having permanent employees. Similarly, maintenance was undertaken by external parties, with Air Deccan only paying a pre-agreed charge which included cost of parts and labour. Daily maintenance however remained an in-house service, as it was considered core to business. By ensuring that approved tools were sent to site, while access to hangers was pre-arranged, Air Deccan avoided sending an aircraft back to its home base for repair, another significant cost saving. Marketing was also an essential undertaking which required unconventional means of reaching the masses. Air Deccan adopted a strategy of advertising in railway stations and local language newspapers, mediums not traditionally used by legacy carriers.

During Air Deccan's period of exceptional growth, the carrier was able to reduce turnaround times to as little as fifteen minutes from landing to take-off. This compared favourably with legacy carriers who used to land at the same airports, yet experienced turnaround times of 30 – 50 minutes, which was significantly longer. Due to this, Air Deccan's utilisation was twelve hours per day compared to Indian Airlines' nine hours.

3.1.5 Market Obstacles

Despite the enormous success achieved by Air Deccan at the time, many significant challenges remained. Government policies, which were largely archaic as far as civil aviation were concerned, remained a major obstacle to growth, while constant uncertainty as to expected changes in government, and their likely civil aviation policies, had a profound negative effect on the industry. Such uncertainly did not bode well for significant investment in the sector, while fuel prices and their related taxes, instituted by government departments also had a major impact on profitability.

Not long after commencing operations, several of the new entrants into India's low-cost market ceased to operate, including Kingfisher Airlines despite having the backing of one of the country's largest conglomerates (Wharton, 2013). The tragedy however was that Kingfisher Airlines had purchased Air Deccan in 2007, as the latter found itself in financial turmoil, brought about by funding constraints and mismanagement. Despite having been pioneers in India's LCC market, after only three years from inception, Air Deccan was experiencing operational difficulties. Regular flight cancellations, lost baggage and extremely poor on time performance mounted, and the reputation of the airline was severely affected. In 2005, the founder of Air Deccan, Captain Gopinath brought in a team of expat management from Europe, and while a temporary fix prevailed, the founder never relinquished true control. There was no Chief Executive Officer in place, and while the Chief Operating Officer had some operational control, the ultimate control remained with Captain Gopinath. Resentment between local Indian management and those brought in intensified, leading to several expatriates leaving, and the operational problems were never truly resolved. When Kingfisher Airlines and Air Deccan merged in 2007, they were never able to integrate the former's upmarket luxury airline model with that of a true LCC given legacy cost issues. While initially the two brands were kept separate, Kingfisher later integrated low-cost Deccan under the Kingfisher brand in 2008 renaming it Kingfisher Red. Unfortunately this proved to be the final nail in the coffin as in 2008 low-cost operations ceased all together.

3.2 Case Study 2

Shlumberger and Weisskopf (2014) describe how between 2005 – 2007 in Mexico, several LCCs entered the market following the liberalisation of the country's aviation sector, a move which involved the privatisation of airlines, airports and aviation infrastructure in the country. Despite the country's large land mass, only 3 – 5 percent of the population had ever utilised air transport by 2007, with bus travel remaining the mode of choice with more than fifty five million trips having been made on buses during 2005 as it provided the only affordable way to travel for the majority of Mexicans. As the economy had stabilised more-or less post 2004, this acted as a catalyst to the emergence of LCCs following years of economic turmoil, seeing a 17 percent rise in the number of middle class from 2000 – 2010.

The market still had many challenges to overcome however such as those relating to the lack of low cost distribution channels for the sale of tickets. In 2005, internet penetration was only 17.2 per 100 users while only 11.7 million credit cards were in issue out of a total

population of 110 million (World Bank, 2015), however LCCs employed innovative strategies to tackle such deficiencies. IAMSA, the country's largest bus operator who transported on average 300 million passengers per year invested in VIvaAerobus, and was able to leverage off its existing distribution and ticket sales network, while also making use of its bus network to transport passengers to and from airports. One major advantage was the ability to both market and distribute tickets to would be bus travellers at bus ticket vendor offices, especially in cases where the cost of travelling by air was almost comparable to the cost of a bus ticket, despite travelling time being significantly reduced. In addition, passengers could purchase combination bus and air tickets, providing an almost door to door linkage which was a significant competitive advantage compared to other carriers. Such innovative practices allowed LCCs to capture one-third of the domestic market by 2008 in a market which had grown significantly due to the entrance of passengers who were first time flyers. By 2012, LCCs had captured almost 60 percent of the domestic market with VivaAerobus, with the airlines having estimated that 25 percent of all passengers during that year were first-time travellers.

3.2.1 Ticket Prices

In order to wrestle additional market share from legacy carriers, LCCs also took advantage of the fact that there were limited slots at the country's main airport, Mexico City Airport. By developing new routes which were underserved, or not served at all, several new point-to- point routes were established between many of the country's smaller airports. Much of the stellar growth exhibited was also largely attributable to the clear distinction in ticket prices between LCCs and legacy carriers. A study undertaken by the Mexican Government in conjunction with the Organisation for Economic Co-operation and Development in 2010 showed that the average fare per kilometre on an LCC was 42 percent lower than its legacy counterpart on the same routes, while fares on a legacy carrier were 30 – 117 percent higher than those on the LCC Aeromexico, with the latter sometimes matching or even undercutting bus fares on the same routes.

3.2.2 Tourism

Clearly one of the most positive impacts of the emergence of LCCs in Mexico was the stimulation of the country's tourism sector. In one example the Mexico City – Cancun route recorded growth of 39 percent in 2012, being a 900,000 passenger or one-third increase in domestic passenger numbers in a single year. Overall, Mexico's domestic air transport

market grew nearly 30 percent from the year 2005 to 2012, and this growth is set to continue as the country's aviation sector is expected to realise at least 5% growth per year until 2032. Much of that growth is attributed to the expected uptake in traffic between the US and Mexico, as "visiting friends and relatives", or VFR travel and tourism as it has come to be known, takes off. This type of tourism has been documented to be integral to LCC growth in developing countries where vacation tourism markets are smaller than those in developing countries (Graham et al., 2008).

Schlumberger and Weisskopf (2014) further describes how Mexico continues to display many challenges affecting its aviation market, such as exceptionally high airport tariffs which far surpass those in other Latin American countries (Schlumberger and Weisskopf, 2014). These charges sometimes comprise up to 30 percent of the average ticket price, and further increases are expected due to airport operators having communicated their intentions to increase costs in the coming years.. The authors state that while airport authorities utilise required infrastructural improvements as the core reason for such costs increases, most airlines believe these investments are not required but rather attempts to tax the industry to supplement government earnings. With the airport operators in Mexico having done little to diversify their income sources in the last decade despite the exponential growth witnesses in the sector, they rely heavily on such revenues (Schlumberger and Weisskopf, 2014). Some airports however, recognising the need to support and promote LCCs, have developed separate terminals for such airlines, which has decreased costs and congestion, and incentivised LCCs to fly there rather than utilising other airports (Schlumberger and Weisskopf, 2014).

3.3 Concluding Remarks

The key points from both case studies, most relevant to the research, are summarised in Table 5, on the next page.

Success Factors	India (Air Deccan)	Mexico (VivaAerobus)
The Market	Extremely high load factors	Provided a seamless network of road and air transport through one operator
	Targeted routes underserviced by legacy carriers	Marketed airline tickets through bus vending stores
	Targeted rural towns given population residing 75% in such areas	Targeted new routes
		VFR travel large driver of demand
Costs	Short turnaround times	
	All non-core activities outsourced	
	Maintenance managed in house but tooling was pre-arranged at required locations	
	Non-conventional advertising mediums	
Ticket Prices	Monitoring load factors in real-time allowed the airline to maximise load factors through altering ticket prices where necessary	LCC ticket prices substantially less than legacy, and at times largely equal to bus tickets
Ticket Distribution	Targeted phone bookings with ticket collections from thousands of vendors countrywide	
	Used online ticketing system paying agents at ticketing centres small commission saving significant cost	
	Ticketing centres placed cash on deposit to avoid credit risk	
	Track load factors in real-time through distribution system	
Aircraft	Convinced aircraft manufacturers to waive deposit	
	Maximised seating density	
Major Obstacles to overcome	Political uncertainly and government policies major impediment	High airport charges major problem
	Air Deccan being acquired by wrong parent was its downfall	Dedicated terminals for LCCs strongly supportive

Table 5: Case Studies Summary

4. Theories governing Low-Cost Carriers

4.1 Theories

This study draws on various theories which are well-established in the civil aviation sector. These theories have been formulated over the many decades of commercial flight, which began in 1914 before giving rise to firstly, the traditional legacy carrier, and later, the LCC with the inception of Southwest Airlines in the 1970s (viewed by many as the pioneer of the LCC model as indicated in the literature review). The extent to which LCCs have altered the air travel market in certain countries and regions is well documented (Piga and Bachis, 2006). In particular, the success of airlines such as Southwest, Ryanair, EasyJet and AirAsia have been highlighted and consequently, their business models have been studied extensively (O'Connell and Williams, 2005). The analysis of these models and their effect on their respective markets forms the backbone of modern LCC theory. This study will therefore draw on three theories which pertain to the objectives mentioned in the introductory chapter, and these theories jointly provide a theoretical basis for the study and help identify the critical success factors sought.

4.1.1 Theory 1

The first theory underpinning the framework of this study concerns factors that drive air travel passenger demand. According to Boeing, at a regional level, about 60 to 80 percent of air travel growth can be directly attributed to economic growth, which in turn is driven by trade (Boeing, 2013). This conclusion is based on the fact that countries whose economies are heavily reliant on trade, tend to have higher rates of air travel. The remaining 20 – 40 percent share of air travel growth that is not directly associated with GDP growth, can be attributed to market specific factors such as; passenger preferences and behavior, arrival and departure times, routings, nonstop flights, choice of carriers, service class, and fare stimulated demand. Within this category, the liberalisation of the aviation market is the primary initial driver of air traffic demand. According to Boeing (2013), studies have suggested that as the relative openness of a country's bilateral air service rises from the 20th to the 70th percentile, the resulting increase in traffic can boost air travel demand by 30 percent. In addition, improved air services and liberalisation both

directly and indirectly stimulates economic growth, which in turn leads to further air transport growth, again stimulating economic growth and creating a virtuous cycle.

4.1.2 Theory 2

The second theory relates to the phenomenon known as the Southwest Effect, which is well documented in the literature (Mertens and Vowles, 2012) on LCCs and has been utilised on many occasions as a basis for understanding the effect of LCCs in a number of markets. This theory is named after the pioneer of low-cost air travel (Southwest Airlines), and describes a two-fold effect which occurs when an LCC enters a new market. Firstly, there tends to be a significant increase in the number of airline passengers traveling in that market and secondly a noteworthy decrease in the average fare paid by travelers in that market (Mertens and Vowles, 2012). The theory states that the Southwest Effect is not only evident in the market that the LCC actually enters, but spills over into other markets and regions which have multiple airports that are directly or indirectly linked to the market in question - even if the LCC is only serving one of the airports in that market. The Southwest effect is also usually magnified in markets where legacy carriers are unable to lower their fares in response to the entrance of the LCC. This may not only be as a result of their higher cost base, but rather may be due to another impact which is not immediately evident. Research has shown that passengers prefer non-stop service to those which pass through major hubs (Mertens and Vowles, 2012), and therefore a direct flight should in theory have a premium built into the ticket price. As legacy carriers make use of a hub and spoke system, they would need to lower their tickets prices even below that of an LCC (all else being equal) to compete from a price point of view.

4.1.3 Theory 3

The final theory pertains to the cost structure of airlines, being comprised of high fixed cost and low variable costs. In effect, revenue decisions can be made with little concern for the associated increased costs. That is, adding additional passengers might only add minimal addition cost in the form of fuel and catering, as most of the cost has already been incurred in the form of a high fixed cost base (Donovan, 2007). Yield management is a technique that is utilised to maximize revenues due to this cost structure, by filling as many seats as possible, to ensure revenues are maximised. In general, the manner in which LCC's practice yield management is somewhat disparate from the manner in which legacy carriers undertake this practice. Legacy carriers offer many different seating classes aiming to

maximise revenues with various types of passenger types, while LCCs simplify the process, filling seats early through hefty discounts.

4.2 Theoretical Basis for the Study

The theories documented broadly cover three key general attributes that are pivotal to the success of low-cost carriers, from a theoretical point of view. By understanding how these theories pertain to LCCs in SSA, one is able to infer how many other sub-attributes will similarly apply, as explained below.

The first theory described deals with the factors that drive airline passenger demand in general, a factor which is absolutely key to the success of any airline, be it legacy or a LCC. From the literature described in Chapter 2, market demand drives the sub-attribute being load factors, which appears to be vital to a LCC's success as documented in other regions of the world. For example, this is highlighted in Chapter 3, pertaining to the success of Air Deccan in India which in large part was as a result of high load factors. Therefore the manner in which this theory can be applied in assessing likely demand trends in Africa, and how such trends might drive load factors is central to the outcome of this Study.

The Southwest Effect, named after the pioneering LCC Southwest Airlines in the US, came about due to an effect which continues to be documented in many regions of the world as described above. This effect, while being shown to drive a significant increase in passenger numbers in that market as a first effect (which is pivotal for load factors as shown in 4.2.1), it is also shown to drive pricing downward, in the region as a whole, as a secondary effect. The first effect, higher demand, is not necessarily as a direct result of the second effect being lower prices, as passenger numbers might increase due to an overall impression of greater accessibility for passengers, new route offerings and simpler to understand booking and travelling processes which are directed at the general population. Therefore this secondary effect is important in its own right by creating an overall impression in an underserviced market that air travel is accessible to those who were previously disregarded. This is important in creating a new market of passengers, thereby avoiding cannibalizing existing legacy carrier markets, which alleviates the threat of competition. Therefore, this sub-effect of competition, has similarly been shown to be a key attribute to the success of LCCs in other markets, as shown in the preceding chapters. The manner in which competition is managed in SSA, particularly given the multitude of government owned carriers, will likely be decisive to the success of LCCs in the region.

The final theory pertains to the cost structure of airlines and the manner in which revenues can be maximized in the airline industry by exploiting certain factors that apply. That is, the manner in which legacy carriers maximize revenues, through yield management techniques is somewhat different to the manner in which LCCs undertake this practice. Ensuring that revenues are always maximized through correctly pricing tickets, given the largely fixed cost base of an airline, revenue maximising is extremely important to the success of both legacy and low-cost carriers. Consequently, the manner in which LCCs undertake this practice in SSA is deemed to be vital to such airline's success given regionspecific factors relating to certain sub-effects such as local airline ticket booking tastes and preferences, local affordability andwhether passengers will indeed book well in advance.

5. RESEARCH METHODOLOGY

5.1 Data Collection and Analysis

Primary research was undertaken in order to analyse the SAA market directly. The method utilised in this study is that of the Grounded Theory Approach (Williams, 2007) whichis a systematic methodology which first poses a research question, and then a multitude of data is collected and reviewed so that concepts can be coded into broad groups or categories. Through such categories, greater organisation of concepts and themes occurs, with core categories eventually becoming clear and apparent. Throughout the coding process, memos were taken constantly, drawing potential relationships between the codes identified and how they pertain to the overall research question. Utilising the theories mentioned in Chapter 4, core categories were established, in which to group information pertinent to supporting or discrediting these theories.

A qualitative data analysis software package called Atlas was utilised for the purposes of this study which allowed both primary and secondary data to be combined and analysed jointly. Therefore information that was relevant to the hypothesis was identified and isolated. The software provides the tools necessary to manage and analyse large sets of qualitative information, all presented in various formats, to identify trends, linkages and map commonality or disparity in the data. Once codes were streamlined, they were then created in Atlas, and then data from the information that pertained to these themes or codes were extracted, combined and linked to be analysed later.

5.2 Data Sources

Two main types of data were utilised in the study:

5.2.1 Primary Data

- Questionnaire survey undertaken with 31 market participants
- Interviews with the Executive Management from four LCCs operating in SSA.

Questionnaire to general market participants

The responses to the questionnaire (see Appendix A) were aggregated in order to identify trends and preferences. One key criteria for selection was that the respondent actually

resided in SSA. Various methods of obtaining responses were utilised in order to ensure that the sample was somewhat diverse as described in 5.5. That included, the Researcher utilising his own network, while also obtaining responses from participants in airports, taxi operators, hotel staff, and their respective networks.

Interviews with Executive Management of airlines in SSA.

One on one interviews with executive management at four LCCs in SSA were conducted. This was to enable the Researcher to access anecdotal experience of what is critical to the success of an LCC in SSA. This information was then compared to the secondary data collected, in order to draw parallels, and establish which factors were common to the study. The following executive personnel were interviewed and they gave permission to indicate their positions in the respective company.

Fastjet

The Researcher conducted an interview with the Chief Operating Officer of Fastjet.

Jambojet

The interview was conducted with the CEO of Jambojet Airlines.

Kulula / Comair

The CEO of Kulula / Comair was interviewed.

FlyAfrica

The interview was conducted with one of the Executive Managers of FlyAfrica.

5.2.2 Secondary Data

There is a dearth of information on LCCs in developing markets as this phenomenon is relatively recent and certainly less established that mature markets such as the US and Europe. The bulk of the secondary information collected pertained to the early LLC markets, focussing on Southwest, Ryanair and EasyJet, the pioneers and most successful airlines to have entered the low-cost space. Information was sought from airline's websites, journal articles, books, periodicals and internet articles which provided a strong literally base from which to initiative the research, allowing the Researcher to formulate the surveys and questionnaire to be used in collecting the primary data.

Information from airline websites

Information obtained from airline websites provided information pertaining to route offerings as well as their associated ticket prices. This allowed for an analysis to be undertaken comparing the price of travel in SSA versus other markets and regions.

Journal articles / Periodicals / Books / Internet articles

As previously noted, there is a dearth of information on LCCs in developing markets as this phenomenon is relatively recent compared to LCCs in mature markets such as the US and Europe. Information which did allude to specific LCC successes achieved in India and Mexico provide very useful insight for the study. Nevertheless, the bulk of the secondary information collected pertains to the early LCC markets, focussing on Southwest Airlines, Ryanair and EasyJet as indicated above. Information from secondary sources was useful in formulating the survey questionnaire used in collecting the primary data.

5.3 Admissibility and Methods of achieving Validity

5.3.1 Admissibility

Data utilised were assessed for admissibility. Table 6 below summarises how the data utilised to address each sub problem pertaining to the research question, were assessed.

5.3.2 Internal Validity

With respect to the information collected through the surveys with market participants, the sources were not verified and were collected through convenience sampling. Nevertheless the intention was to use the results for guidance purposes only, providing some possible trends which might apply in the SSA landscape.

With respect to the one on one interviews, these were carried out with executive management at several airlines, and each was selected based on their credentials and the high regard in which they are held in the industry. Given that the researcher has regular contact with most carriers servicing SSA by virtue of his job, the respective interviewees were purposively selected from a larger pool of potential candidates, based on individual credentials and the circumstances relating to their respective airlines. An important selection criteria was that each airline operates in different markets in the region, and each has its own specific attributes and characteristics.

Table 6: Admissibility of data

Sub problem	Type of data	Admissibility of the Data
What are the critical success factors for LCCs in developed markets such as Western Europe, US and Asia.	Literature including journal, magazine and newspaper articles	Fully admissible provided the sources were credible and key points were supported by other similar literature.
How does the European or US markets differ developing markets, or in particular SSA where possible to compare.	Limited secondary data pertaining specifically to developing markets was utilised in the form of internet articles and a single book (Schlumberger and Weisskopf, 2014).	Admissibility was governed by the credibility of the respective information sources. Therefore only information originating from bodies such as The World Bank Group and recognized journals were considered.
What SSA specific factors are likely to affect the success of an LCC in the region both positively and negatively.	Surveys with markets participants	With respect to surveys, general preferences and overall trends were identified to be used as a proxy for the market, rather than aiming to identify true population representative factors. As long as the answers provided were logical, their admissibility was not questioned given the intent of the Researcher to utilise these responses in a limited capacity.
	Interviews with management at four LCCs.	All the feedback provided during the one on one interviews were admissible given that the interviewees are all considered to be subject matter experts in their respective markets and industries.
	Information obtained by the Researcher through the nature of his work.	The information provided by the Researcher through his general dealings in the aviation market was all admissible on the basis that such insights are based on factual occurrences in the industry and have been presented as such, clearly indicating the sources of the information.

This allowed the Researcher to draw conclusions covering a wider scope and therefore allowing for the validity of individual responses to be tested. As an example, Kulula predominantly operates in South Africa which is largely a developed market while it is privately owned, and is also a subsidiary of British Airways / Comair, being a legacy domestic carrier. Fastjet on the other hand has no large legacy carrier to lean on, and operates only as a regional airline flying high demand international routes in the region. Jambojet on the other hand, while being part of Kenyan Airways, has strong regional aspirations, despite operating in a relatively weak domestic market in Kenya. Lastly FlyAfrica, being the new entrant into the market, relies on the Asian model of several Franchises to cover a larger geographical region, while it remains privately owned, having no ties to any legacy carriers whatsoever.

5.3.3 External validity

By obtaining case studies relating to LCCs in developing markets, although limited, the author was able to extract elements that have a strong possibility of pertaining to SSA given strong similarities between SSA and these specific markets. Namely, with respect to infrastructure, population size, incomes per capita, vast distances, and several other factors, Mexico and India share many similarities with SSA, despite obvious differences. Therefore the external validity of this research appears to be sound, and in essence provides the best possible primary research which might act as a proxy for the SSA region.

By interviewing four executive managers of LCCs in SSA, all of whom have experience in developed markets, the challenges they have encountered and continent specific experience provided highly valuable information for the study. The interviews saw a multitude of diverse opinions being presented, given the unique circumstances of each person, and the airline in which he manages. The high level positions of the interviewees and their credibility or respective responsibilities at these airlines contributed to the validity while comparing information from different sources improved validity through triangulation.

5.4 General credibility and trustworthiness

The research draws on both primary and secondary information from various sources and locations. Overall credibility is established through triangulation, bringing agreement and concurrence to the outcomes of the analysis from the various sources.

If disparities arose between the information collected in the surveys and that collected through the one-on-one interviews and information on the respective airline websites, the interviews were given preference. If disparities arose between the interviews then further verification was sought and the cause for disparity investigated.

In order to limit the possibility of creating bias through his own assumptions and bias, the researcher took concrete steps to avoid such bias. That is, the methods relating to the selection of the survey participants, interviewees for one on one interviews and even the literature collected could be subject to personal bias. In order to limit such bias, the following was instituted. Participants for the survey were selected in a cascading convenience sampling manner, with the researcher not having contact with the participants in most cases. The Researcher used a network of friends, colleagues and strangers to collect

responses, which provided a sample size of 36 from several international locations, which helped reduce personal bias.

The responses collected indicated that all participants were either employed or studying further, and therefore the sample collected is not representative of the whole population but rather provides insight into the habits and preferences of individuals who are employed on the continent. The survey was provided either online, or in email format, which provided a natural selection mechanism as only those with internet access, either at home or at work, could answer. This was taken into consideration in analysing and utilising the conclusions presented by ensuring the results were only a guide or utilised to back up the other data already collected.

Five individuals who are executive management from various airlines were contacted. These five airlines were chosen by virtue of their differing characteristics such as locations of operation, stand alone or part of legacy carriers, local or international routes, and the like. Only four persons accepted to be interviewed, all representing airlines with differing characteristics.

5.5 Population of the Study

Surveys were filled in by 36 people from 7 countries in SSA. The sample comprised of both students and working individuals, the latter represented by employees with a range of experience across several sectors. The survey involved mostly employed individuals or those in the process of achieving qualifications. Years of work experience was utilised as a possible proxy for travel usage and affordability on the assumption that those with more work experience are likely to be more senior in their respective occupations, and would hence travel more as they are remunerated better.

The one on one interviews were conducted with the executive management of four airlines with the subjects in question all having many years of management experience in the industry prior to their current roles, usually at legacy carriers, of larger size as far as turnover, aircraft and routes are concerned.

5.5.1 Sampling Procedure

The researcher used non probability sampling, both purposive and convenient for the purposes of sampling. For the surveys, convenience sampling was undertaken and

cascading used, thereby allowing any potential market participant to participate in the study.

For the one -on-one interviews, the selection of participants was purposive. This involved purposely selecting subject matter experts, with proven experience on the subject matter.

5.5.2 Questionnaire Design and Administration

Two separate questionnaires were utilised, one for the survey, and one for the one-on-one interviews. The survey questionnaire, was designed as follows

- The literature available on the general subject was utilised to formulate the questions, by drawing on existing airlines offerings, what consumers in developed markets prefer, and how pricing might be perceived by local travellers.
- Sixteen questions were compiled in mostly multiple choice format, to ascertain air travel habits, tastes and preferences.
- Participants were sent either a PDF questionnaire via email, or provided with a link to a website where they could answer the questionnaire.
- No questionnaires were excluded from the analysis even if certain questions were omitted or not answered correctly.

The questionnaire for the one-on-one interviews was designed and administrated as follows:

- A questionnaire, comprising of ten main sections, with sub questions in each, was compiled utilising the existing literature on the subject.
- Case studies were utilised in formulating the questionnaire, whereby experiences of LCCs in other markets provided a framework for what is currently being practiced by the interviewee's airlines, how certain challenges are tackled and how certain market specific factors relate to SSA.
- All the interviews were conducted face-to-face utilising a digital device to record the interviews. The interviews took roughly 1.5 hours each.
- The interviews were then transcribed into text format, and the information utilised for the purposes of the research.

5.6 Research Ethics

All respondents, both those conveniently selected for the survey and the subject matter experts for one-on-one interviews, were both dealt with ethically in accordance with the University's ethics requirements. The following was undertaken in order to abide by the standard requirements:

- Surveys – the survey provided an explanation of the purpose of the research, while clearly specifying that the respondent's participation is completely voluntary and anonymity would be maintained.
- One-on-one interviews – the four participants were provided with a written and verbal explanation as to the purposes of the research, and the manner in which the interview will be conducted and their consent was sought. Furthermore, they were informed that they may withdraw their participation at any time, and both censor information, or remain anonymous, should they wish to. All participants signed a consent form, both acknowledging that they clearly understood the terms of their involvement, as well as consented to being audio recorded.

6. Results and Analysis

6.1 Introduction

The researcher undertook four individual studies, with the results of each shown below.

6.2 Survey

A survey was undertaken which included responses from 36 respondents, with the results shown below.

6.2.1 Respondents Countries

The majority of the respondents resided in Malawi, Tanzania and South Africa respectively, with smaller proportions originating from Namibia and Zambia respectively. Single responses from Botswana and Ghana, completed the sample.

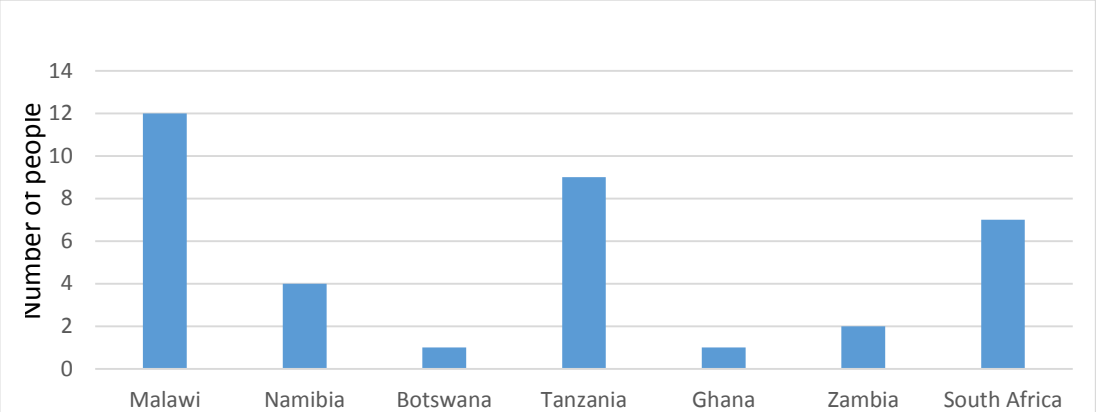

Figure 7: Countries where respondents reside

6.2.2 Years of experience

The vast majority of respondents had two years or less of work experience, with the number of responses decreasing as work experience years increased.

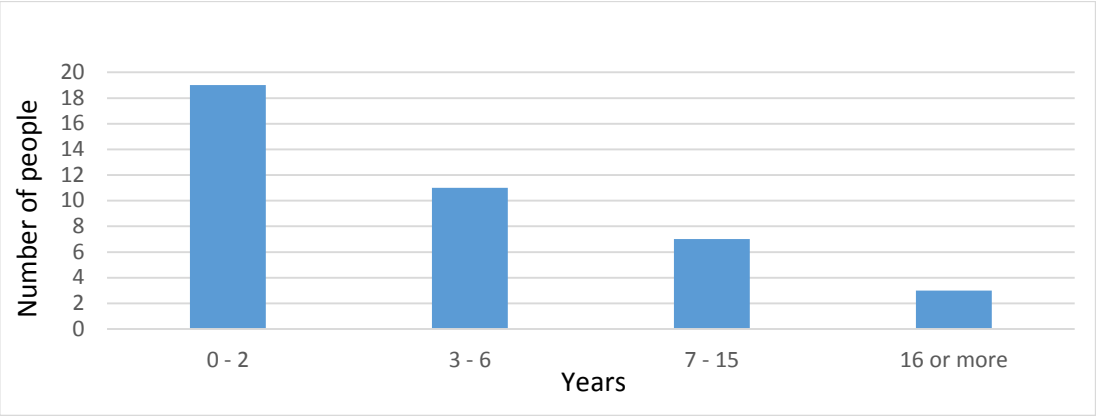

Figure 8: Years of work experience of the respondents

6.2.3 Travel to other cities

Figure 9 indicates that thirteen respondents had travelled to another city in their respective home country more than 10 times in the last two years, seven travelled 7 – 10 times and nine travelled 4 – 6 times. The majority of respondents travel regularly within their own country with only one individual having not left his city during the last two years.

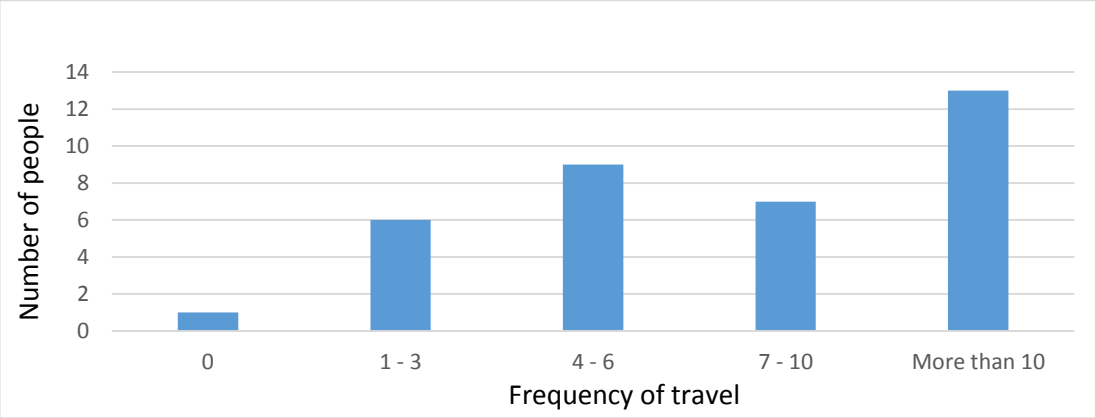

Figure 9: Instances travelled to another city in own country by any mode of transport in last two years

6.2.4 Travel to other countries

At the same time, nineteen individuals had travelled to another country in the last two years, five having travelled 4 – 6 times, and another five having travelled seven or more times. This indicates that while international trips are not infrequent, they do not occur as often as domestic ones within ones own country.

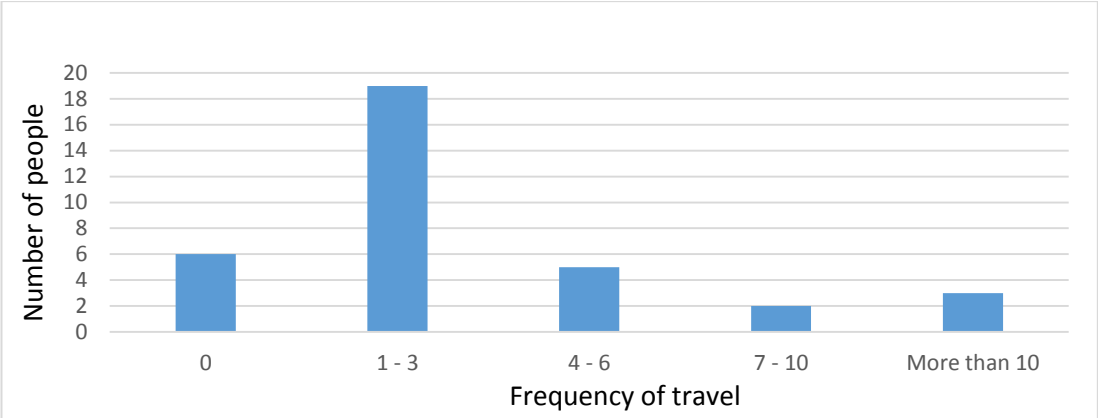

Figure 10: Instances travelled to another country by any mode of transport in last two years

6.2.5 Air travel utilisation

Most notable from the results, as shown by Figure 11, 23 respondents had utilised air travel in the last six months, while only five individuals had never flown on an aircraft. For the rest of the respondents, most had utilised air transport within the last two years, with only one respondent having flown more than four years ago.

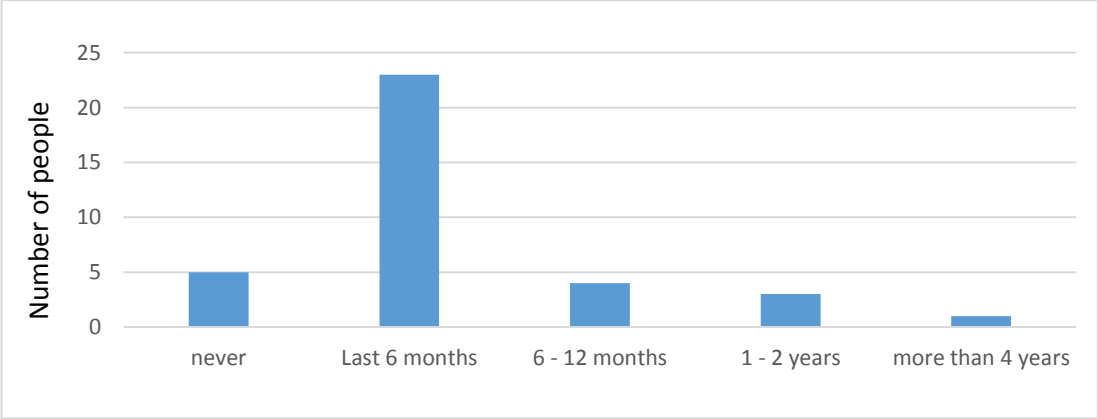

Figure 11: Last time utilising air transport

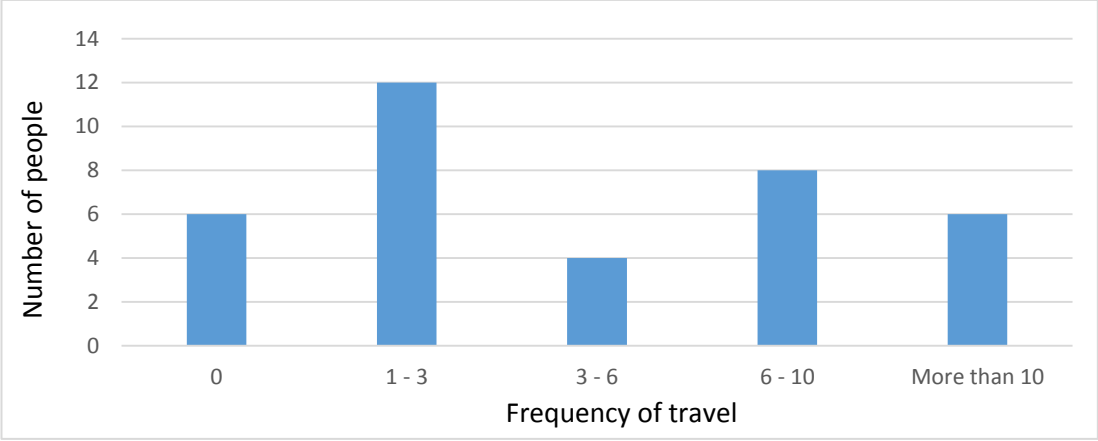

Figure 12: Instances flown in last two years

Of the thirty respondents indicated in Figure 11 who had utilised air travel in the last two years, most notably, as shown in Figure 12, only twelve respondents had utilised air travel 1 – 3 times, with eight individuals having flown 6 – 10 times, and another six more than 10 times.

6.2.6 Motivation for using air travel

Figure 13 clearly indicates that while air travel might be considered more expensive, due to its benefits, it remains the transport method of choice amongst the majority of respondents in this sample. Nevertheless, a fair proportion still indicated a reluctance to fly given its relative expense, yet only six individuals out of the entire sample of 36 respondents stated they never utilised air transport due to cost.

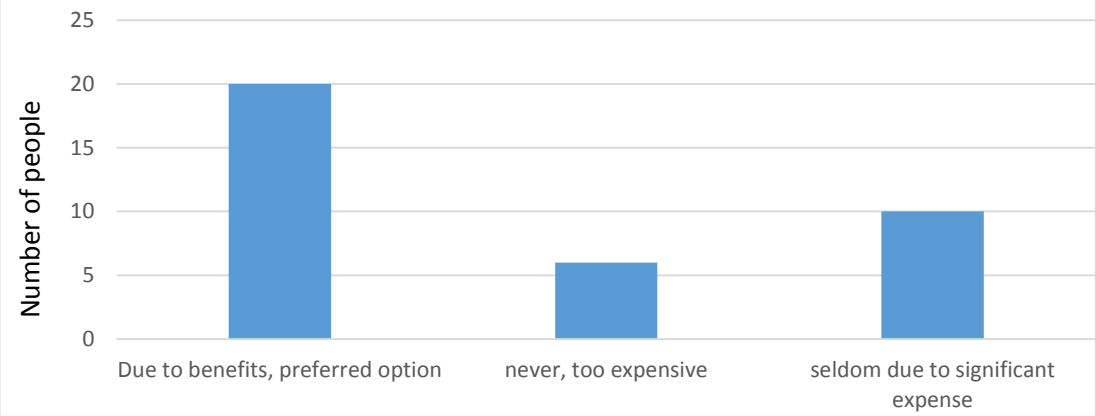

Figure 13: Reasons for utilising air transport

6.2.7 Passenger Preferences

Through a grading system which aggregated responses where 6 was the most important, and 1 the least important, price was the most important factor in governing transport / airline choice. Overall, all the other attributes namely direct route offerings, strict time schedules, ease of booking, in-flight services and proximity of airport to the city / transport networks were of relative equal importance and generally secondary to price.

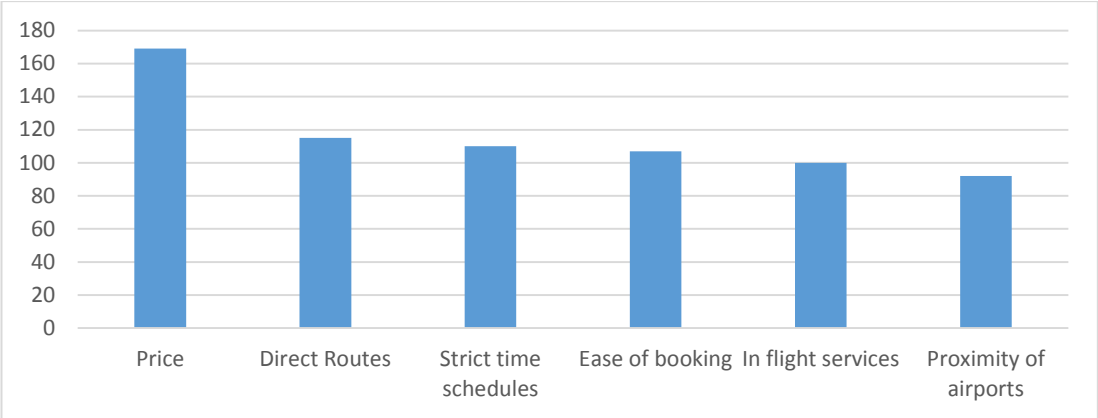

Figure 14: Preferred airline attributes

6.2.8 Ticket Prices

According to the results, in order for significant passenger demand to be stimulated, the all-inclusive one-way ticket price of an international flight would need to effectively fall into the ranges shown above.. Most notably, eight respondents indicated a price of between $100 - $150, twelve respondents indicated a ticket price of between $150 – $300. Interestingly, seven respondents indicated a one-way price of between $300 - $500, largely equal to the prices charged by legacy carriers for regional air tickets. Only a relatively small proportion of respondents indicated that a one-way all-inclusive ticket price of between $30-60 (5) and $60-100 (4) would adequately stimulate demand for this mode of transport.

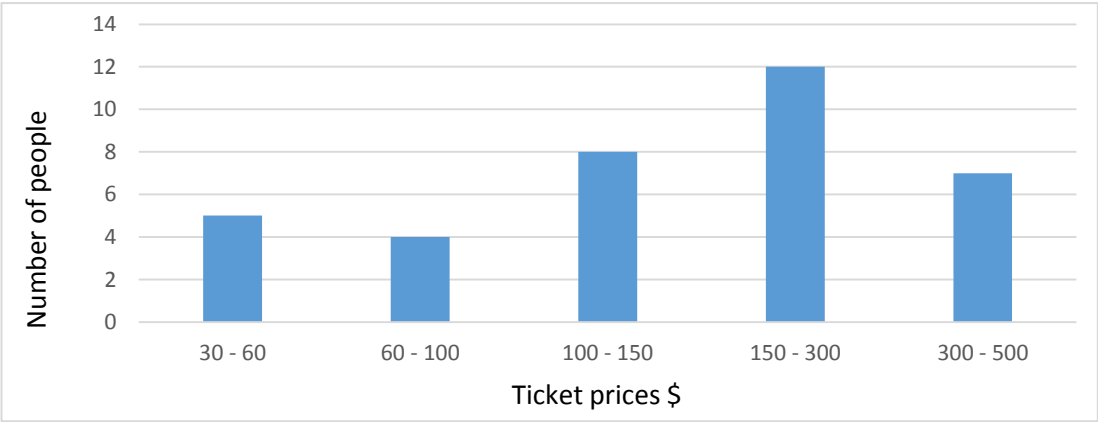

Figure 15: Preferred maximum one-way ticket price in USD

6.2.9 Potential Demand

Based on the ticket prices indicated in Figure 15 above, if such prices did prevail in the market, Figure 16 indicates the number of times, per annum, that respondents would utilise air travel. Of the responses, thirteen respondents would travel 1 – 3 times per

annum, while eleven would travel 4 – 6 times. Fewer numbers would travel 7 – 10 times per annum (4), while eight would travel more than ten times.

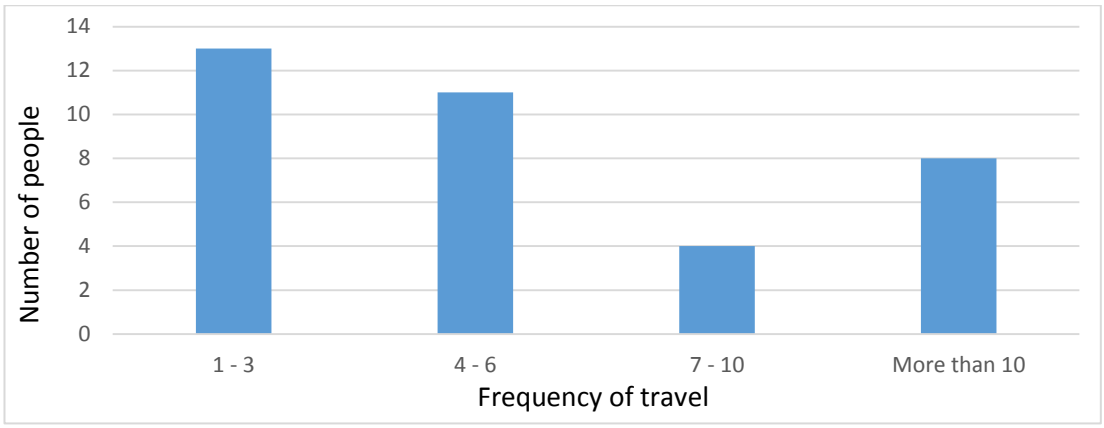

Figure 16: Intended air travel utilisation per year

6.2.10 Payment Preferences

As shown by the results displayed in Figure 17, cash remains the payment method of choice for most participants surveyed, with many SSA economies being largely cash based given that credit card penetration is at much lower levels than their developed counterparts. While internet and cellphone based money transfer was only marginally less popular, the need to provide cash facilities remains pivotal to the success of an airline and cannot be discounted.

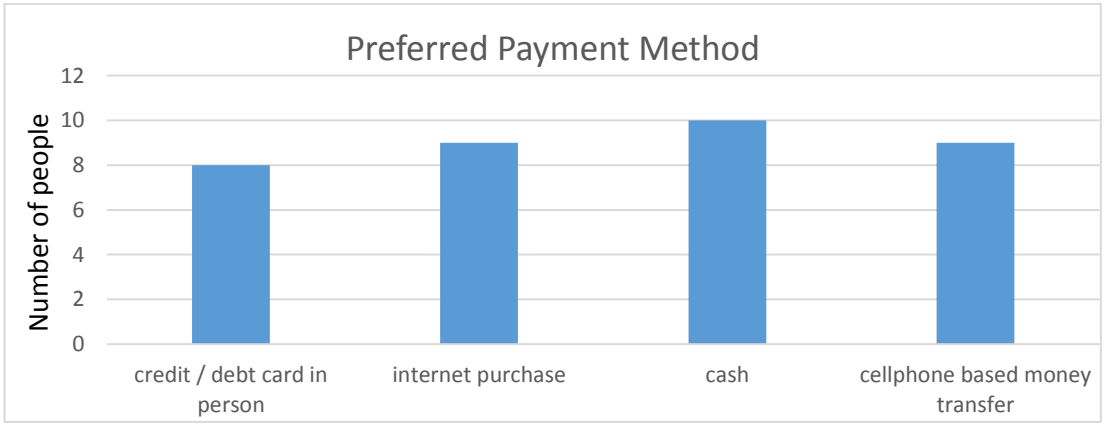

Figure 17: Preferred method of payment

6.2.11 Written responses in questionnaire

In addition to the multiple choice questions on the questionnaire, respondents also provided written responses to certain questions. The Questionnaire posed the question as to why respondents chose a certain form of transport when travelling either domestically

or internationally. The responses to this highlighted a common theme that road transport was utilised over shorter distances or for domestic travel given that such distances were more manageable, and that the high cost of flying could only be justified when there was little alternative. Another pertinent point that was alluded to by a respondent was that air travel avoids border crossing delays and issues that are commonplace in SSA, thereby justifying additional cost in such instances.

6.3 Ticket Price Comparison

From published data available on airline ticket price aggregators and bus operator websites, the researcher compiled comparative costs per kilometre in USD ($) based on a full one-way ticket price for various routes using both air travel and road transport. The lowest possible price offered on that route was utilised to normalise the data as much as possible, and therefore in many cases the price returned was that on an LCC for routes in the US, Europe or India. In SSA, where an LCC offering existed, this flight was chosen yet in most instances only a legacy carrier offered services on that route. The results provide a basis for comparison between various regions and modes of transport.

6.3.1 Airfares in SSA

In Table 7, the comparative cost of flying between various SSA locations is displayed. Clearly, routes that are serviced by a LCC exhibit the lowest cost per km, with the Johannesburg (JNB) – Cape Town route, JNB-Dar Es' Salaam (DAR) and DAR-Mwanza routes having the lowest USD ($) cents cost per km, being serviced by Mango / Kulula, and Fastjet respectively. This cost per km rises significantly on the DAR-LLW and JNB-GBE routes where only legacy carriers operate, and competition is limited. Costs per km on average across the nineteen routes is $22 cents / km.

Table 7: Air transport costs in $ cents / km between various SSA locations compiled by Researcher

	Cape Town	**Dar Es Salaam**	**Mwanza**	**Gaborone**	**Nairobi**
Johannesburg	6,29	10,00	18,27	45,03	10,97
Dar Es Salaam			9,52	15,67	40,74
	Lilongwe	**Lusaka**	**Windhoek**	**Maputo**	**Beira**
Johannesburg	19,46	14,39	16,35	33,89	27,65
Dar Es Salaam	49,29	9,20	15,97	13,36	
Lilongwe		27,47		45,43	

6.3.2 Airfares in Europe

In Europe, which remains the world's most developed market for LCCs, ticket costs per km, as shown by Table 8 are largely below $10 cents / km, with a few routes offering ticket prices below $3 cents / km, such as from London to Rome, Warsaw and Athens, and from Barcelona to Salzburg. Certain select routes incur a high cost per km, such as London-Manchester, and London-Paris, yet given the short distances on these routes, being 265 and 368 km respectively, the cost per km for a flight is always likely to be high as the fixed costs per flight, regardless of distances remain the same and this needs to be absorbed by the passengers over a shorter distance. The average cost across the sixteen locations shown is $7.3 cents / km.

Table 8: Air transport costs in $ cents / km between various European locations compiled by researcher

	Manchester	**Aberdeen**	**Salzburg**	**Prague**
London	34,03	8,44	6,29	5,09
Locations	Paris	Berlin	Munich	Athens
London	14,33	3,79	5,97	1,80
Marseille		12,93		7,11
	Dublin	**Rome**	**Waraw**	**Barcelona**
London		2,32	2,12	3,17
Berlin	4,12			
Munich	3,02			
Barcelona			1,75	

6.3.3 Airfares in India

In the Indian market, as shown in Table 9, while costs are relatively higher than in Europe, at an average of $8.5 cents / km across the eight locations shown, they remain substantially lower than those in SSA. The highest cost between Udaipur and Jammu is at $15.15 cents / km, while being higher than any European routes (apart from the very short distances routes discussed), still remains below the average cost for SSA.

Table 9: Air transport costs in $ cents / km between various Indian locations compiled by researcher

Locations	**Jaipur**	**Jammu**	**Mumbai**
Jaipur		10,09	5,69
Mangalore			5,78
Mumbai	5,62		
Port Blair			8,10
Pune		10,46	
Udaipur		15,15	
Bangalore	7,22		

6.3.4 Airfares in the US

In the US market, across the sixteen locations shown in Table 10, the average cost is $14.52 cents / km. Again certain short distance flights, such as between Los Angeles-San Diego, and Memphis-Atlanta, being 179 and 567 kms respectively skew the average upward, supporting the case for the absorption of high fixed costs on longer distance routes. This is evidenced by the New York-Los Angeles and New York-Seattle routes at $4.08 cents and $4.49 cents / litre respectively.

Table 10: Air transport costs in $ cents / km between various US locations compiled by researcher

	Atlanta	Detroit	Ft Lauderdale
Atlanta		7,00	10,08
Austin		9,16	
Chicago	6,14		
Memphis	21,47		
New Orleans	12,42		
	Los Angeles	New York	Seattle
Atlanta		11,16	5,96
Baltimore	5,60		
Chicago	5,76	10,23	
Detroit		12,34	
Las Vegas	9,39		
New York	4,08		4,49
San Diego	97,16		

6.3.5 Bus fares in SSA

Table 11 displays the cost per km, for bus tickets as offered by two well-known bus service companies in SSA. With an average cost of $4.6 cents / km across the six routes shown, this is significantly lower than the average for the same six locations if one utilises air travel being $22.58 cents / km. As shown in Europe, India and the US, several routes are comparable in cost to those relating to bus services in SSA. If carriers in SSA were able to offer similarly comparable costs to bus fares, it is conceivable that passengers would make a shift from buses to air travel given air travel's significant benefits over road transport which include being safer, quicker and far more convenient.

Table 11: Road transport costs in $ cents / km between various SSA locations compiled by researcher

Locations	Mwanza	Gaborone	Nairobi	Lilongwe	Lusaka	Maputo
Johannesburg		7,04		6,39		6,32
Dar Es Salaam	2,19		3,53		2,21	

6.4 Fuel Costs

The researcher sourced information from IATA on fuel costs at various major cities in SSA which were compared as shown in Figure 18 below. This shows that the fuel price in Cape Town, which is only moderately higher than those that prevail at large European or US airports, is significantly lower than the prevailing fuel costs at every other SSA location. It is no coincidence that the airports with the lowest fuel costs, boast both high volumes by relative standards, as well as the most developed infrastructure, including in-country refineries, pipelines, and storage facilities. As one moves away from these hubs, fuel costs increase substantially as the state of infrastructure gets poorer, and/or volumes decrease.

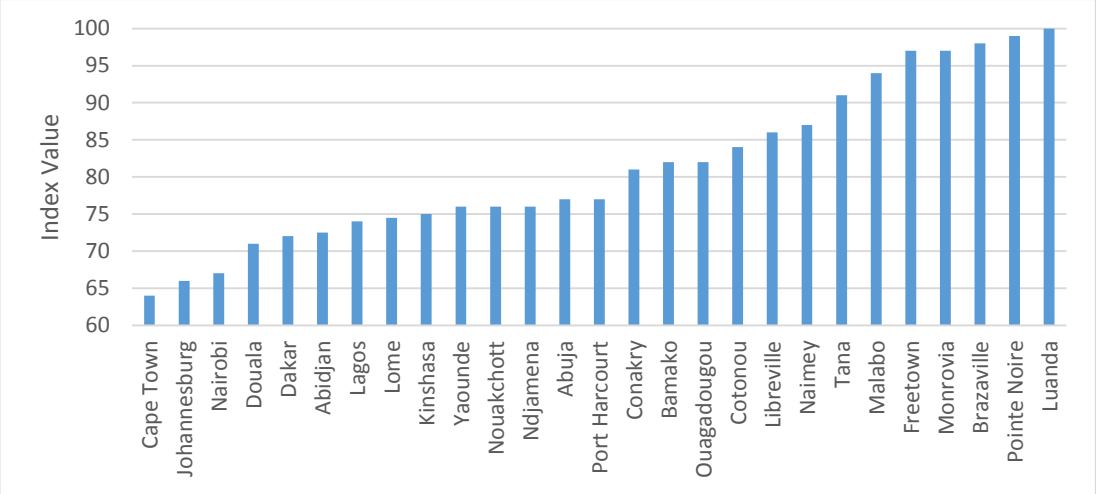

Figure 18: Jet Fuel Price Comparison – September 2014 (IATA)

6.5 One-on-one Interviews

Based on the information provided by the four airline executives, key issues pertaining to their airlines, and how these apply in SSA have been summarised in Table 12 on the next page. All the opinions expressed in this section are those of the airline executives interviewed.

Table 12: Summarised results of one-on-one interviews

	Fastjet	Jambojet	Kulula	FlyAfrica
The Market	38% of all passengers, interviewed during a recent survey showed they had never been into an airport, let alone flown on an aircraft	15 million individual road trips are taken each year from Nairobi to Mombasa, taking 8 hours to cover 450km on dangerous roads	Lack of significant middle class is a major impediment to LCCs in SSA	While current market doesn't exist, elasticity of demand is pivotal, and large untapped market is waiting to be serviced. Demographics favour a young society that just requires education.
	By providing a service offering international standards of reliability, safety and quality, a new demand has surfaced which never existed before	Kenya Airways ticket prices are beyond the reach of most people	Half-hearted attempts to launch regional LCC carriers with smaller aircraft have proven unsuccessful.	LCCs must target new routes not currently being serviced and demand will increase significantly.
	The LCC model only works when a certain proportion of passengers book early. In SSA, given that many passengers are distrustful of service providers, substantial amount of education is required to gain trust so that passengers do indeed book early.	Survey indicated that 40% of people would utilise air travel provided ticket prices were affordable and safety and reliability standards were adhered to		Those who believe the market does not exist are too well entrenched in established markets, and do not understand the true LCC model that has proven successful in other parts of the world
		Education remains key, and social media has proven highly successful in achieving this		
ownership Structure	Having any affiliation to a legacy carrier is more of a hindrance that a benefit.	In SSA, situation is vastly different to Europe, and it remains very difficult for an LCC to operate without legacy carrier association.	Utilising various hubs, as opposed to one single one, could provide a hybrid solution around both economies of scale, market demand, and bilaterals.	Each franchise is structured without affiliation to any legacy carriers or other airlines, being registered in home country to take advantage of bilaterals
	While there may be some benefits, true cost separation is impossible	Economies of scale provided by KQ outweigh the negatives.	An LCC being tied to a legacy carrier is a major hindrance.	Economies of scale are achieved through group buying by combining franchise purchasing.
		Higher costs do however flow through from parent company	Kulula operates completely independently of BA, although still takes advantage of economies of scale	Fastjet do not share this structure being managed centrally from the UK.
				Being tied to a legacy carrier is a significant disadvantage

	Fastjet	Jambojet	Kulula	FlyAfrica
Routes	After first launching domestic routes in Tanzania, attempting to launch the regional routes to South Africa were extremely challenging due to approvals from South African authorities. Only assistance from Tanzanian government, threatening SAA landing rights in Tanzania, proved successful. Situation similar launching routes from Zambia to South Africa	Satisfying operational requirements is pivotal in route selection.	Legacy carriers like SAA defend their routes vehemently, and this improving to be the case on the JNB-DAR route affecting Fastjet's efforts.	
	State protectionism of national carriers, and routes is a major problem in Africa	Secondary is air traffic statistics on certain routes, assessing price elasticity given passenger type being business or leisure travellers. Each	Given largely domestic focus in South Africa, looks to grow existing routes more than creating new ones.	
	Dynamic model is used to gauge demand on potential new routes, using customer feedback, and constant updating of the model to ensure greatest accuracy		Codeshares or looking to assist other airlines on their existing routes which include South Africa as part of the route, rather than looking to break into such markets is the preferred strategy	
			Load factors must be above required levels from the start when operating new routes, while operational factors such as likely delays must also be taken into consideration	
Costs	Outsource as much as possible keeping only core functions such as yield management and accounting in-house	Outsources as much as possible keeping staff count to a minimum.	Aviation costs in SSA relatively high compared to developed markets. Low utilisation and lack of economies of scale largely to blame	Cost minimisation is absolutely key to an LCCs functioning and similar opportunities to reduce costs substantially exist in Africa
	Ticketing system outdated and costly due to it being inherited by acquired airline	Costs between legacy and LCC largely the same with some areas for small savings, such as ticket distribution. Hence airlines focussing on promoting website	Too much outsourcing could be detrimental in the medium to longer term.	Reduction in oil prices should be used to reallocate finances to purchasing fuel efficient aircraft in anticipation of the oil market recovering
		All transactions with KQ undertaken at arms length.	Despite additional cost, GDS system is outsourced to taking advantage of latest ticketing solution is seen to be key.	Utilise influential shareholders, where possible, to lobby governments for taxes and third party charge reductions.
				Outsourcing brings much needed contract flexibility even if purchased at a premium

	Fastjet	Jambojet	Kulula	FlyAfrica
Ticket Prices	Aim is to start ticket sales for each flight at $20 one-way, regardless of the route before moving to the next tier. This strategy is to attract early stage demand	Each flight treated individually, assessing whether frequented by business or leisure travellers and treated appropriately.	Recently started offering unbundled seats, stripping out any extras like checked luggage. This however doesn't bring about significant cost saving. Therefore ancillaries not normally sold by airlines are targeted.	Ticked price completely unbundled, with seat used as a hook, to gain revenue from all other ancillaries.
				Do not charge fuel surcharges, which they believe other airlines use as an additional tax to supplement revenues
				Believe ticket prices can be brought down substantially given high price elasticity in the SSA market
Ticket Distribution	Need for ticketing offices given lack of internet penetration and credit cards in SSA.	Uses sales offices in the city and at the airport.	Used a GDS, but passes the booking fee onto the passenger for non-internet related sales	Fully outsources non-internet sales to agents, as expertise is providing airline seats, not distributing tickets
	Amadeus GDS used, at additional cost, to accommodate ticketing offices	Does not use a GDS due to significant costs, focussing on internet sales as much as possible as internet penetration relatively high in Kenya, with 40% of all sales occurring through this medium	Internet penetration significantly higher in South Africa, hence model is different	Ticket sales through mobile phones being focussed on given high mobile phone penetration
	Mpesa utilised wherever possible, particularly at pop-up-shops, taking the market to the customer	35% of tickets still sold for cash	Believe the lack of internet penetration in markets outside of South Africa poses major challenge to LCCs	Costs of ticketing through GDS passed onto customer
Aircraft	Fleet is underutilised currently as aircraft should be used for 11.5 hours per day. Currently have one spare aircraft which is undesirable.	Utilises two B737s on loan from KQ, yet these are older aircraft which require more maintenance. Third aircraft kept as spare to avoid delays and mistrust of airline	Must use latest aircraft to keep fuel costs low.	Unit costs are measured against fuel burn.
	Despite Embraers being better suited to SSA runways, more expensive to run per seat, so A319s are used holding 177 people.	Due to aircraft coming from KQ, can only fit 142 seats, and not the 149 maximum	Routes determine aircraft type, and while smaller aircraft are cheaper upfront, running costs significantly more expensive per passenger.	Commonality more important than aircraft type resulting in cost savings
	A319s chosen over B737s as oversupply of the former coming out of Easyjet, so they are cheaper to purchase.		Balance demand with fuel and maintenance costs in determining which aircraft to use.	Central leasing company provides several financing options to franchises and method of financing depends on each franchises unique funding structure.
			Market, and airline specific factors, such as interest rates, gearing, term of use and fleet flexibility will determine whether to buy or lease aircraft	

	Fastjet	Jambojet	Kulula	FlyAfrica
Ancillary Revenue	Ancillary revenues provide much needed revenue given that profits from ticket sales can at times be minimal	Traditional ancillaries are offered, yet believe market is not ready for ancillaries such as accommodation, car hire and the like.		Non-traditional ancillaries only likely to be offered at a later stage, having already built the system to accommodate it, yet timing not as yet ideal given market structure
	Well functioning website pivotal to achieving maximum benefit from ancillaries.	Charges a small fee for holding a ticket for 24 hours without payment given local circumstances		
	Ancillaries in SSA likely to be smaller proportion of revenues, so new innovative ways of earning revenues are required.	Does not market other brands in the form of advertising revenue until own brand is established.		
Competition		Fastjet likely to encounter very strong competition from SAA, who serves the JNB-DAR route well.	Protectionism of national carriers is a major problem in SSA.	Avoids highly competitive routes such as the domestic ones in South Africa, targeting routes poorly serviced by other carriers.
		Existing passengers are not the market, being too brand conscious.	Total liberalisation not ideal either in SSA as airlines like Emirates would simply take over due to superior economies of scale and positon of hub.	
Brand		Look to attract those who have never flown before and are less brand conscious	People in SSA are very brand conscious despite popular belief.	
			Image of reliability and safety is most important	
Critical success factors	Cookie cutter approach will not work in SSA. Unique circumstances require unique approach	Leisure travellers will be pivotal to the success of LCCs in Africa	LCCs need to effectively attract passengers who could not afford to travel otherwise.	Attracting strong talent / employees, and supportive shareholders
		First mover advantage also pivotal	High load factors are pivotal	
		Current LCCs in Africa may be low cost, but are not low fare.	Different cultures, tastes, jurisdictions and governments in SSA presents major challenge to regional LCC	
		Need to convince those utilising other forms of transport to utilise LCCs		

This chapter has provided the results from the analysis of the data collected from the survey undertaken, the interviews with executive management of select LCCs operating in SSA and comparative transport cost and fuel cost data compiled by the researcher from reliable published data. The next chapter interprets and discusses the results.

7. Discussion

7.1 Introduction

Based on the results obtained in the previous chapter, the interpretation and discussion follows below.

7.2 Survey

Given the results from the survey answered by 36 respondents, several key implications can be drawn, despite the relatively small sample size.

7.2.1 Profile of travelers

In general, it might be assumed that those with less work experience, earn less than those with more work experience, measured in years. The vast majority of the respondents had between 0 – 2 years work experience (nineteen), while eleven respondents had between 3 – 6 years work experience. This data is somewhat skewed and implies that while there are others factors affecting affordability, the answers provided should be viewed in the context of a non-randomised sample with the majority of the respondents having relatively lower spending power.

Despite the sample's overall lower work experience, and subsequently more limited affordability as suggested above, younger participants tend to be more technically orientated, utilise bank accounts and tend to be more amenable to trying out new forms of transport. This is likely to represent the target market for potentially new LCCs in SSA rather than those who might have greater affordability. The results of the survey therefore represent individuals who would travel less for business purposes, yet whose affordability might be more limited.

7.2.2 Travel Behaviour

The results indicate that using any mode of transport, local trips, to domestic locations within ones country of abode, are commonplace, while trips to another country in the region are less commonplace. The reasons for this could be numerous, however, one main reason that surfaced was that domestic trips cost significantly less than cross border ones as road transport can be utilised, thereby avoiding the need to fly. Another reason that

transpired alluded to the fact that local trips are made regularly for personal reasons such as family affairs. Given that SSA's intra-tourist market is relatively small, it follows that international tourism-related travel to other countries is largely insignificant. Offering more affordable air travel options for domestic services as a start would likely attract this business away from road transport as participants would likely utilise LCCs. In addition, by stimulating demand through price elasticity, demand for regional services, akin to that seen on local trips which is significant in comparison, is likely to surface. Given the lack of tourism related travel in Africa, this should really be the aim of any new entrants, particularly to stimulate tourism related travel which remains a major driver of capacity on LCCs in Europe, the US and Asia.

Surprisingly, despite the lack of meaningful international trips, and limited affordability, a significant number of respondents utilised air travel in the last six months, with several having travelled on more than 6 trips in the last two years. This displays not only relatively regular activity, but also recent activity, which lends some additional credibility to this activity continuing rather than being isolated and irregular amongst younger participants.

7.2.3 Price versus Benefits

The results indicate that that air travel is still considered to be the preferred option due to its benefits, this despite the higher cost. This suggests that while air travel demand in other parts of the world has been shown to be highly elastic, in Africa, it might actually be less so. In particular, air travel in Africa has little substitute, as it does in Europe (rail) or the US (road) and therefore one is likely to face the dilemma of flying, or not travelling at all.

While price remains crucial in determining whether passengers will utilise air travel for transport purposes or not as shown by the results of ranking key attributes that attract people to use air travel, the benefits offered by air travel ensures that it remains the preferred mode of transport. This is surprising since affordability is indicated as a decisive factor. One might have anticipated that the majority of respondents would select never to utilise air travel due to cost, or perhaps to only seldom utilise air travel due to the cost. Instead it is apparent that the benefits are so profound, that one might decide to save for longer and postpone travelling, in order to fly as opposed to travelling by road. For example, a respondent alluded to the fact that air travel avoids border crossing delays. Further it appears that knowledge of such benefits are widespread, whereby the benefits are recognised, and only cost remains an impediment.

While price was clearly the most important attribute contributing to choice of transport and airline, the other attributes mentioned were secondary in importance to price, but largely of equal importance to each other. Therefore in SSA, it would appear that low pricing remains pivotal, while a focus on other attributes is relatively less important, provided they are balanced appropriately and equally in order to achieve maximum customer satisfaction and uptake.

The maximum price that a one way ticket can cost, in order to stimulate increased demand from the respondents, was surprisingly higher than one might anticipate, given that the levels indicated by the majority of respondents was somewhat equal to those offered by legacy carriers in many instances. One would have anticipated these levels being lower given significantly lower income per capita in Africa. There are three possible explanations for this:

- While ticket prices appear to be decisive, the gap between different segments of SSA's middle class might be larger than anticipated with respect to affordability, particularly so where income disparity is very prevalent in the region. Assuming this fact is true, if LCCs want to ensure maximum uptake and utilisation, pricing will have to appeal to a larger market to ensure affordability across the segment.
- Inaccuracies relating to responses tend to prevail when questions regarding one's own affordability are posed. This is due to human nature which tends to inflate or overstate affordability, when real life situations might display disparate truths. If one assumes this is true, and that the majority of the respondents in the $150-$300 bracket would have actually only paid a maximum of $100 - $150 per ticket, being one tier lower, this would appear to be more in line with reality given comparisons with Europe and the US.
- The most probable explanation is that with demand being less elastic in SSA than it is in other parts of the world, the respondents would still fly, if ticket prices prevailed at the levels indicated, however such usage would be less frequent. In order to truly stimulate demand to levels required to ensure high load factors in SSA, they would have to be significantly less. That is, if ticket prices for air travel in SSA were at the levels indicated in the responses, the majority of respondent however would still only travel less than 6 times per annum, with the greater proportion of those only travelling between 1 – 3 times per year which remains relatively low, and therefore requiring lower prices to stimulate increased demand.

7.2.4 Method of payment

Cash remains the method of payment of choice for most, which corresponds with the fact that many SSA economies are largely cash based, with credit card penetration being at much lower levels than their developed counterparts. This implies that the need to provide cash facilities remains pivotal to the success of an airline in SSA and cannot be discounted.

7.3 Ticket price Comparison

Air ticket prices in SSA are comparatively some of the highest in the world when viewed on a cost per km basis. While there may be other factors that contribute to this, largely, a lack of competition which breeds greater inefficiency is considered to be the root cause. In markets such as India and Latin America, no significant cost advantages exist as these markets have their own unique issues, yet certain LCCs operate profitably. From the data compiled on the travel costs per km across various regions and modes of transport, it is apparent that there is a significant amount of leeway in which SSA ticket prices can reduce, to ensure that travellers reconsider their options when selecting to utilise ground transport, or not travel at all. When maximising load factors and aircraft utilisation, both being pivotal, all attempts to reduce ticket prices, and therefore attract additional demand should be made.

7.4 Fuel costs

Fuel costs, being Jet-A1 fuel, remain comparatively higher in Africa compared to many other regions of the world. From information available in the industry, three main factors contribute to such high costs, being lack of fuel infrastructure, additional taxes and levies, and low volumes. As far as infrastructure is concerned, the lack of local refineries, fuel pipelines and often treacherous roads add significantly to logistics costs, as imported product requires far more intervention in order to move it from the import terminal, to the airport where it is required. Regional production facilities, such as refineries, are few and far between in SSA, and apart from Kenya and South Africa, very few others exists. In Zambia, despite the country having the Indeni refinery which is located in Ndola, the refinery does not produce enough fuel to meet annual demands, while the situation is somewhat similar in Ghana. Kenya on the other hand has a 90,000 barrel/day refinery in Mombasa, yet that said, in order to meet local requirements, approximately 56,000 barrels

per day of refined fuels are still imported. Yet Kenya can boast a pipeline which runs from the refinery / port in Mombasa, to both Jomo Kenyata Airport in Nairobi and Mombasa's Moi airports, including two other smaller domestic airports which is highly effective in bringing down fuel transport costs.

Many governments in SSA continue to burden importers with significant cost and third party taxes, only exacerbating the already high cost of imported product at the expense of airlines and passengers. As an example, information available confirms that despite most of Zambia's fuel product requirements being imported into the country from Feruka (Zimbabwe) or Dar Es' Salaam (Tanzania), importers are required to price their fuel off the regulated Indeni jet fuel price rather than the import parity price of the product, which would allow for cost savings to be passed on. In addition, all product imported into the country incurs an import duty, and therefore despite imported product being historically cheaper than the regulated price, the import duty paid distorts this advantage. Therefore, airlines and in turn passengers, are subject to the regulated price as the cost base for fuel, while suppliers, looking to achieve reasonable margins, comparable to other countries in the region, apply a more significant differential to cover import costs. Third party taxes and charges levied by government are also passed to the airlines, and can amount to an additional two percent of the Indeni price, making the price significantly more expensive than neighbouring countries that similarly import fuel such as Tanzania or Zimbabwe. Zambia however is not unique in this sense with others similarly imposing non-justifiable taxes and duties, which add to the already high costs of fuel.

Furthermore, lower volumes that persist in Africa are a major contributor to high fuel costs. Aviation fuelling equipment and facilities must meet international standards at all times as far as safety and product quality is concerned. This comes at high cost particularly relating to fuel storage and airport fuelling depots. That is, the cost to construct and run a depot is largely the same despite the volume. It becomes somewhat of a vicious cycle however, as higher fuel costs due to lack of infrastructure and government imposed duties and taxes only make it less attractive for airlines to either fly, or uplift fuel in certain SSA locations, which lowers volumes, and raises fixed costs per unit of fuel. In Zambia as an example, several large international carriers simply cancelled their scheduled flights to the country in 2014 partly due to fuel costs, while other airlines tanker fuel from other locations, which remains more cost competitive. Tankering, which is a term used in the aviation industry, is the activity whereby airlines uplift additional fuel in cheaper locations, so that there

remains additional fuel on board to cover part or all of the return trip, while minimising the fuel uplifted in the expensive location.

7.5 One-on-one Interviews

From the one-on-one interviews conducted with executive management of four LCCs in SSA, the views obtained, and summarised into key themes as shown in Table 12, are discussed in the key themes below and shown how they pertain to the three theories described in Chapter 4.

7.5.1 The Market

The interviewees were unanimous that LCCs in SSA need to target a new market and make air travel accessible to the masses, however actually achieving this is a significant challenge. Through significantly lower ticket prices, providing new route offerings and through education and marketing to the under-serviced market currently utilising ground transport, attracting this new market could become a reality.

The literature discussed in Chapter 2 clearly shows that common to all markets where LCCs have proven the most successful, LCCs created a new market, namely a significant proportion of passengers comprised of new entrants into the aviation travel market. This figure was at times as high as two thirds of all passengers that otherwise would not have utilised this mode of transport. Therefore, in theory, LCCs did not pose a threat to established legacy carriers whose service offering was somewhat different and being offered at a higher ticket price. In certain countries such as Mexico, LCCs adopted an almost bus transit operations in the sky, linking passengers from point to point utilising a combination of both buses and airplanes, on one ticket, purchased from a bus operators vending office with the airplane ticket at times even having been cheaper than a seat on a bus for the same route. Education is also pivotal, in both the benefits and convenience relating to air travel, while also addressing what appears to be a fear factor which originates from naivety in as far as questions around safety and reliability are concerned. An LCC will have to address this as an absolutely critical success factors.

In order to bring a new market into the sector, ticket prices will have to be to some extent comparable to those relating to other forms of transport. While this will be addressed in more detail in the section relating to ticket prices, the target market is highly price elastic,

and unless ticket prices are able to stimulate significant demand, this critical success factor will not be achieved.

While Mexico and India are in many ways comparable to SSA, the fact that they are sovereign countries, each with one market and air traffic regime does not lend itself to direct comparisons with a region comprising of many different countries. In this sense, Europe becomes a better proxy where liberalisation of markets was absolutely key to the success experienced by airlines such as Ryanair and EasyJet. While this will also be discussed in more detail in the section relating to Ownership Structure below, the lack of follow through on the Yamoussoukro Decision (YD), and the continued protectionism of state owned carriers and routes is considered by key industry players interviewed to be a major challenge in the SSA market. This critical success factor pertains to the manner in which an LCC addresses bilaterals, of which there are really two strategies whereby an LCC either takes matters into its own hands, or waits for the region's governments to take action, an intent that has yet to materialise in SSA despite many years of promises.

From the theories discussed in Chapter 4, forming the theoretical basis for the study, Theory 1 deals with passenger demand which has been shown to drive load factors, a sub-attribute which is a critical success factor in LCC theory. All LCCs, regardless of the regions in which they operate, rely on airplanes which are full and therefore revenue generating at all times. While education and ticket prices, as mentioned, are pivotal to this, LCCS, more so than their legacy counterparts rely on a steady supply of leisure passengers to fill their planes. This type of passenger is more price elastic and usually travels in groups of more than one, and are also prepared to sacrifice certain full service items in exchange for a saving in cost. The vast majority of passengers who frequent US and European LCCs are tourists in nature, and without this demand, these LCCs would surely cease to exist. This perhaps remains the largest challenge for LCCs in SSA, as intra-African tourism in particular, remains in its infancy. Foreign tourists visiting the region would tend to be less price elastic, utilising expensive legacy carriers to access the region, and while FlyDubai is a lower-cost option for visitors to the continent and possibly carries a larger proportion of price-sensitive tourists, targeting intra-African tourists is vital. African tourists have minimal transport options available to them apart from expensive legacy carrier options or road transport which has its own pitfalls, and perhaps with an LCC offering, a new market of intra-regional tourists may develop as has been the case in parts of Europe in particular. This factor is however far too critical to adopt the notion of "build it and they will come", as this may

never materialise, and even if it does, it could take some time leading to significant losses for the airline before breaking even.

LCCs in SSA will therefore need to target the emerging middle class, from both tourist and business circles, this especially so in a region that has a far larger informal sector comprising of many entrepreneurs and small business owners who would normally not utilise legacy carriers at all, or only in very particular instances. Furthermore, migration patterns in Africa have shown significant movement of people from rural to urban areas, as well as from smaller, less developed and at times war affected regions to more stable ones in the search for employment and safety. This also has contributed to a sizeable market of VFR passengers, perhaps an unexploited market which remains heavily reliant on ground transport. As far as intra-African tourism is concerned, LCCs will have to play a major role in creating this market, by providing would be tourists with affordable packages which include both the air and necessary ground transport, visa requirements, accommodation, and the like. Being less sophisticated as far as intra-regional tourism is concerned, packages that provide simplicity, affordability, and convenience might lend themselves to attracting a new market of tourists, who in the past might have feared the complexity of travelling to new countries, including dealing with visa requirements and arranging local transport and accommodation.

7.5.2 Ownership Structure

Ownership structure provides an over-arching key theme which encompasses both routes and competition as sub-themes. That is, by virtue of the ownership structure of the airline, it will affect both route offerings and the manner in which both legacy airlines, and other LCCS compete in the market. Almost unanimous amongst the executives interviewed was the fact that being affiliated to a legacy carrier which operates from a hub, in general, is a major hindrance to an LCC's ability to perform successfully. In addition, state protectionism of national airlines, and restricting landing rights was a major challenge for LCCs in SSA as per the responses obtained, and that means that the need to circumvent such restrictions, while also avoiding competing head-on with state protected airlines, was essential.

As far as affiliation to a legacy carrier is concerned, it is likely to restricts route offerings and bring about higher costs through a hub, and that it is not necessarily required for economies of scale to be achieved. Rather there are other means in which to achieve this, while still operating independently, which is the overarching issue ensuring true cost

separation. Ties to a legacy carrier in general are perceived to be a major hindrance for an LCC unless a complete separation exists, whereby management, operations, strategy and the like are accounted for independently. While some benefits may accrue from an association with a legacy carrier which might initially provide comfort and a safety net, while also adding value during procurement of goods and services as well as economies of scale, in time, it is likely to be an impediment. It remains pivotal to manage the LCC as a separate entity, while only drawing on the benefits of an association with a legacy carrier if and when necessary to do so. Kulula appears to have struck the perfect balance in this regard, operating independently of British Airways, yet utilising its sister carrier if and when necessary to achieve cost advantages. The nature of Comair not having government involvement and thus inefficiency also reduces the negative effects associated with government owned and associated LCCs, yet carefully managing its association with BA remains pivotal.

As far as routes are concerned, while ensuring demand on specific routes will be adequate to sustain the service offering of the LCC, what is more decisive is an airline's ability to service a specific route, both operationally and from a landing right point of view. Therefore in selecting routes, likely passenger demand might actually be secondary in the decision making process, as many potential routes in SSA might not be feasible due to operational and competitive restrictions. Once such challenges are overcome, provided the LCC looks to attract a new market that does not current exist, theory dictates that demand is likely to materialise provided the LCC provides an offering that is conducive to this.

An airlines ownership structure also largely dictates its network structure, again a factor which is pivotal to the manner in which it operates. Without BASAs in place between two countries, securing landing rights in countries outside of one's home base can be very challenging if the point of origin is not the home base itself. In markets where liberalisation has not been forthcoming to the same extent, carriers looking to offer point-to-point routes have adopted two strategies in order to circumvent the restrictions posed by bilateral service agreements.

- The hub-and-spoke system thereby ushering passengers through a central home based hub, and then onto final destinations.
- Setting up subsidiaries in various countries, which would include a share of local ownership or joint venture with government. By having a locally registered entity in each country, it is able to obtain bilaterals with other countries where it doesn't

have local ownership, and therefore set up point to point networks between many more destinations. This model has proven highly successful in Asia where the aviation market is still not fully liberalised.

Point-to-point networks on one other hand provide added convenience for passengers and reduce overall travel times, while they are far less complex to coordinate for the airline without the need to connect passengers or send luggage to final destination. That said however, load factors can be significantly reduced when avoiding major hubs, a factor that is critical to the success of an LCC in any market. In addition, by adopting a point to point approach, securing landing rights in SSA, where liberalisation is not being practiced, additional obstacles are presented.

One of the ways in which bilateral air agreements requirements can be circumvented is through a hub-and-spoke approach, and if a LCC is able to avoid the additional costs that are associated with this, such an approach is worth exploring. If an LCC were able to establish itself in a country that was strategically located and that does not blindly support an inefficient national carrier, the benefits of a hub-and-spoke might outweigh those from a point-to-point service. Furthermore, if passengers were responsible for ensuring that transfer times were adequate, while also being required to collect and recheck luggage, a type of hybrid approach might work best allowing for load factors not to be compromised. For example, considering the two countries Malawi and Tanzania, even though the former has a national carrier, both are strategically located to serve Southern Africa, have adequate aviation infrastructure, and have relatively more liberal aviation policies. Malawi in particular has little domestic market of its own, and with the economy remaining largely reliant on the export of tobacco, could benefit from an influx of passengers looking to connect to other regions. FlyDubai, as an example, while operating like a LCC to a large extent, has successfully adapted its model to cater for its individual market circumstances. SSA specific risks such as those related to bilateral agreements and low load factors are avoided by aggregating passengers through a hub. Apart from FlyDubai, there are only two other truly regional LCCs by virtue of having a multi-route offerings in the region and exhibiting many of the attributes of the typical LCCS model, being Fastjet and FlyAfrica. Both have opted to set-up a franchise type structure as opposed to utilising a hub of any kind like FlyDubai

Focussing on the first theory in Chapter 4 pertaining to maximising demand, and in doing so, high load factors, this needs to be balanced with the benefits that accrue through

having a point-to-point network. That is, point-to-point networks allow an airline to provide a comprehensive route offering and significant cost savings while providing an ability to fly directly between various jurisdictions, however load factors can be affected as a hub-and-spoke type structure aggregates passengers from various places onto a single flight. Therefore, a hybrid approach, which takes advantage of both network structures, might address both the issue of landing rights and load-factors. That is, setting up various hubs, in countries that provide geographical advantages, do not have national carriers, and might also look to provide cost support to an LCC moving passengers through it could be an innovative, new approach. This has not as yet been exploited in other parts of the world, yet could be highly suited to SSA given its unique circumstances.

Similarly, the second theory in Chapter 4 pertains to the Southwest effect, and that following the entrance of an LCC into a market, demand is seen to increase significantly through rising passenger numbers. Therefore, in selecting routes, a LCCs decision should be based on tackling operational and competition factors first, as once it enters, demand should increase in sufficient numbers to sustain that route offering.

7.5.3 Costs

Unanimous to all the executives interviewed was the need to outsource extensively, at least initially, as a means to achieving initial cost savings and much required contract flexibility. The opinions relating to the manner in which outsourcing is undertaken did differ somewhat however, yet perhaps outside the scope of this research as each individual airline's own unique attributes, funding structure and the like would determine the manner in which it should outsource. In addition, all participants made mention of the need to minimise ticket distribution costs, one particular area where cost savings can be significant with the advent of new technological mediums providing several alternatives to do so.

From the literature described in Chapter 2, the manner in which an LCC minimises costs is absolutely critical to its success, providing the ability to pass such cost savings onto passengers in the form of lower ticket prices, but also allowing it to operate at lower load factors when necessary to do so. There are several ways in which an LCC can minimise costs, such as utilising secondary airports, providing a basic inflight offering, outsourcing, using fuel efficient aircraft, and not utilising a GDS, to mention some examples. Costs may however differ from country to country, and also the proportional split between costs that an airline incurs, such as landing fees, and the costs that a passenger pays, such as airport

taxes.. Further, some avenues of cost saving are not yet applicable to SSA such as the use of secondary airports. Nevertheless, other practices, such as outsourcing can be pivotal in reducing costs. Outsourcing can be used to reduce costs until such a time as insourcing provides more cost benefit and achievement of economies of scale. Achieving the right balance between insourcing and outsourcing is a critical success factor, whereby costs can initially be minimised through outsourcing which reduces funding requirements and increases working capital. While LCCs tend to outsource as much as possible initially, in time, it appears that insourcing certain functions can bring about longer term cost savings and efficiencies.

Nevertheless, based on the data presented, it is unlikely that an LCC in SSA can achieve the same cost savings as those in more developed markets, or even, achieve significant cost advantages against legacy carriers currently operating. That is, passenger volumes in SSA remain significantly lower than other markets where such cost advantages exist. Moreover, fuel costs in Africa remain some of the highest in the world. Regarding outsourcing, companies to which an LCC can outsource some of its services may be limited in SSA, and could even introduce greater inefficiency. With regard to economies of scale, this is difficult to achieve, particularly during the first few years of operation in a market until an airline is well established and has achieved critical mass. Further, government taxes continue to place undue pressure on regional airlines, another factor that is largely unique to the region, and continues to be a major burden for the regions competitive carriers.

In view of the above constraints, LCCs in SSA may have to incur even greater cost than legacy carriers in certain instances, in order to achieve greater efficiency which in the long term would bring about cost savings, but in the short term ensure strategic advantage through differentiation. Most legacy carriers operating in the region are state owned, and years of government support allowed inefficiencies to manifest. This has created a window of opportunity for a new entrant to put policies and procedures in place which would maximise efficiencies, until such time as the continent's legacy carriers implement significant changes to their existing operations. There are certain practices that an LCC can adopt which lowers costs without comprising efficiency such as limiting in-flight services, minimising delays by not offering prebooked seats and offering only an economy class section. This provides an LCC with greater ability to keep ticket prices lower. However a more drastic approach is required to achieve true cost advantage, and FlyDubai is testament to this, utilising a low-cost central hub, through which it feeds its African, and

global destinations. In a similar manner to which RyanAIr utilises secondary airports and secures additional revenue from the airport authority, an LCC could target a primary airport, or country, that is looking to similarly leverage off an airlines ability to bring new passengers to the airport or region. In exchange, costs might be reduced to further support the airline, while government in that country might be amenable to lobbying for reductions in costs. By also increasing fuel uplift volumes in a certain location, fuel suppliers might be more amenable to reducing their margins to support increased volumes, while also working with government to further develop infrastructure which would achieve cost savings through a more efficient fuel supply chain.

Airline ticket distribution is another area where LCCs can achieve significant cost savings against their legacy counterparts. The latter are compelled to use expensive GDS system by virtue of the hub-and-spoke networks they run, whereby passengers across the globe make use of travel agents, and the more complex network requires a system to facilitate it. The lack of internet penetration, computer literacy and lack of credit card ownership in Africa does however pose a major problem with LCCs looking to leverage off a web based system. Nevertheless, there are alternatives such as the use of mobile phones, as mobile penetration rates are significantly higher than the internet in SSA, and mobile based payment systems such as MPESA are widely used.. A successful LCC in Africa will make use of a combination of distribution and payment options, such as internet, mobile, call centres and perhaps vending agents, such as those which air Deccan utilised in India.

Theory 3, as described in Chapter 4, pertains to the cost structure exhibited by airlines. That is, the cost base is largely fixed as opposed to variable, and therefore does not change significantly as passenger numbers increase or decrease. Particularly during the inception of an airlines services, minimising such costs, even if this leads to higher costs in future, would be the preferred strategy given that they are largely fixed in nature. Outsourcing would achieve this aim, while also providing much needed flexibility, should it take time to develop a strong passenger base, or if a downturn is experienced.

7.5.4 Ticket Prices

Based on the accounts of the airline executives interviewed, it can be deduced that provided that load factors and aircraft utilisation are maximised, LCCs in SSA can reduce airline ticket prices to the same extent as those in Europe or the US. For example, it is reasonable to suggest that by stripping out the seat, and charging for any additional

requirements such as checked baggage, ticket changes and reserved seating, seats alone in SSA could be sold at extremely reduced rates particularly to passengers who book well in advance. In addition, all respondents indicated that the offerings that exist in markets such as Europe and the US, pertaining to car hire, accommodation and travel insurance are not suited to the SSA market, at least at the moment. Rather an innovative additional offering, possibly not yet seen in other markets, yet highly suited to the SSA market, is required.

Ticket prices tie in closely with Theory 2, as one of the sub-effects of the Southwest Effect is an overall decrease in air ticket prices in the entire regional market in which that LCC operates. This overall effect is only possible due to legacy carriers similarly lowering their prices in reaction to the new entrant LCC. This is particularly important, as such an effect in general creates an impression that this mode of transport, previously inaccessible to the masses, is now affordable even when considering legacy carrier ticket prices. At the same time, it means that LCCs in general need to innovate and create differentiation through other means apart from ticket prices only. New route offerings are likely to achieve this to some degree, both avoiding competition and displaying differentiation. Yet this is not sufficient, as has been seen in the Europe and the US markets, where LCC differentiation through product offerings also provides much needed ancillary revenues obtained through holiday packages, car hire and insurance offerings. In SSA, where these revenues streams are unlikely to be a factor, an innovative approach is required, pertaining to new route offerings, greater connectivity, as well as ticket offerings which include both ground and air transport, in one ticket.

As far as the third theory is concerned, maximising revenues versus cost is absolutely pivotal for any LCC. Given the uncertainty around booking behaviour, demand patterns and overall price-elasticity in SSA given the lack of literature or case studies in this regard, any new entrant will both have to stimulate early ticket sales, as well as utilise a yield management system that is flexible and allows for real time monitoring. That is, an internet based ticketing system allowing for quick adjustment of prices, as and when necessary, is likely to prove decisive.

7.5.5 Aircraft

From the interviews obtained, it is clear that fuel efficient modern aircraft are generally preferred. The literature shows that LCC in developed markets have tended to utilise younger, more modern, fuel efficient aircraft which provide a cost advantage as far as fuel

and maintenance are concerned. Furthermore, these LCCs have tended to purchase aircraft outright rather than lease them, obtaining significant discounts from manufacturers with the aim of selling them later, often at a residual value which may be equal to or even greater than the aircraft book value. This however requires significant availability to financing, or start-up capital for a new entrant, given that purchasing brand new modern aircraft commands a significant premium over buying older, second hand aircraft or leasing aircraft. In more competitive markets, where several LCCs exist or legacy carriers compete with a less differentiated, lower cost offerings, utilising modern aircraft is pivotal. In less competitive markets, where funding might be constrained, or when fuel costs have reduced to moderate levels as they currently have, and fuel efficiency is less important, the use of older aircraft can provide a cost advantage which outweighs the disadvantages associated with older aircraft. Similarly leasing aircraft as opposed to buying them, provided that it is a temporary measure until such time as aircraft can be purchased, can alleviate funding demands significantly.

In pertaining to aircraft type, the Boeing 737 and Airbus A320 family of aircraft are the most common aircraft utilised by LCCs globally due to their ranges supporting shorter sector lengths, seating capacities which support the correct load factors and their fuel efficiencies. Little other options exist apart from smaller regional jets which are more costly to operate on a per passenger basis, less fuel efficient, and generate less revenue per passenger, per flight. They are however significantly cheaper than their larger counterparts, and require less passengers to ensure they are full. In circumstances where aircraft are not full, particularly in the case of utilising larger narrow body aircraft, the losses can prove to be extremely significant for the airline and therefore maximising load factors is a major consideration in the choice of aircraft. At the same time however, several LCCs operating smaller regional jets have gone out of business, as the revenue / cost mix just does not support a sustainable business model. Therefore only in instances where the revenues are suitable to sustain a higher cost base, should this option be explored.

As per Theory 3 in Chapter 4, ensuring fixed costs are minimised, while the ratio of fixed to variable costs remains unaffected, is largely dependent on aircraft cost minimisation. That is, an airline's largest fixed cost remains aircraft, and its main variable cost remains fuel costs. By appropriately managing the type of aircraft an airline utilises, and the manner in which such aircraft are financed, would adequately address this critical success factor. That is, utilising the right type of aircraft suitable to the market in which the LCCS operates, be it

newer or older aircraft, larger or smaller aircraft, or leasing or buying aircraft, market specific factors will dictate which approach to adopt. What does however remain key is utilising a uniform type of aircraft, to minimise maintenance and training costs.

7.5.6 General Critical Success Factors

As per the interviews undertaken, the airline executives highlighted the key critical success factors which in their minds were most pivotal to the success of LCCs in SSA.

- In order for an LCC to achieve success in SSA, its approach will need to be different to that taken in any other markets globally. That is, a fresh, innovative approach, specifically tailored to the regions unique characteristics will be required.
- In order to achieve the demand levels required, air travel will need compete with commonly used road transport on one end of the spectrum, while supporting a new age of intra-African tourists on the other.
- First mover advantage in key markets will be pivotal in securing an early foot hold for any LCC. Certain LCCs such as Fastjet are already in a good position in this sense, yet may need to adapt their approach to appeal to the masses and create a solid first impression amongst would be travellers.
- Most LCC offerings in SSA are low cost, but not low fare. That is, fares remain relatively higher than LCC offerings in more developed markets, and only once ticket prices moderate to these levels will demand patterns pick up significantly.
- While SSA is a unique market, having strong management, with experience in other markets will be a major advantage for a prospective LCC.

8. Conclusion

In conclusion, several specific outcomes have been achieved in the study. These are highlighted in this chapter, by indicating how the research objectives specified in Chapter 1, the research question and propositions have been addressed. The chapter then suggests limitations to the study and makes recommendations for further research.

8.1 First Objective

As described in Chapters 2 and 3, several factors, being both market related, and airline specific, that are largely responsible for the success of LCCs, in the markets in which they are well established, were identified. These factors are summarised under broad headings, as follows:

- Market Demand
- Competition
- Load Factors
- Secondary Airports and Aircraft Utilisation
- Tourism
- Airports and Infrastructure
- Labour
- Network Type
- Cost Minimisation
- Ticket Distribution
- Ticket Prices
- Yield Management
- Aircraft
- Seating Density
- Ancillary Revenue
- Brand
- Safety Profile

8.2 Second Objective

Through the exercises undertaken and described in Chapter 6, those critical success factors, specific to a LCC's success in SSA, were identified and summarised under broad headings, as follows:

- The market
- Ownership structure
- Routes
- Costs
- Ticket Distribution
- Aircraft
- Ancillary Revenue
- Competition
- Brand

8.3 Third Objective

In addressing the degree to which the critical success factors identified differ between well-established markets, and SSA, while certain factors appear to be universal, there are several which are largely unique to both established markets, and SSA, respectively as discussed in Chapter 7. Most notably market demand factors, which impact load factors, were clearly universal to both, and continued to be highlighted through a causal relationship which is critical to the success of all LCCs regardless of region of operation. Similarly ticket prices, and the manner in which they are distributed, as well as the manner in which additional revenues are earned, are common critical success factors to both established markets and SSA. Similarly, maximising profits through increased revenues relies on cost minimisation, largely attributable to aircraft selection which encompasses both fuel costs and purchasing / leasing of aircraft. This also was highlighted as being pivotal to both established markets and SSA.

Notable differences however are both the reliance on tourism for passenger demand as well as the focus on secondary airports to save cost in established markets, which do not apply to the same extent in SSA. At the same time, ownership structure appeared to be more critical in SSA than established markets.

8.4 Fourth Objective

In proposing a basic business model which would increase the likelihood for success for an LCC, several key factors require the most attention, as follows:

- Absolutely integral to the chances of success for a regional LCC in SSA will be attracting new passengers who have never utilised air travel before. The manner in which this will be achieved will be dependent on lowering ticket prices to levels that on a risk and time basis, compare very favourably with existing ground transport offerings.
- Being affiliated to a legacy carrier is likely to be a major hindrance, and therefore all attempts to operate independently, while targeting methods to achieve economies of scale, is highly preferred.
- The network structure of choice will be paramount given the lack of liberalisation that exists in SSA. While a franchise type model circumvents the lack of BASA to some extent, it can often be at the cost of high load factors. Therefore a hybrid approach, possibly utilising several well chosen hubs, could provide benefit by similarly circumventing landing restrictions, while also achieving greater economies of scale and higher load factors.
- In SSA, it is unlikely that LCCs will be able to lower costs, to the same extent that their European or US counterparts are able to, given the lack of secondary airports, lower volumes, and generally higher costs relating to general aviation operations. Therefore while outsourcing, where possible, and utilising a lower cost ticket distribution system may bring about the largest cost benefits versus legacy carriers in the region, LCCs will need to ensure load factors are as high as possible, so that the cost per passenger km, are always minimised.
- While 'cash remains king' in SSA, providing ticketing systems which both support this method of payment and provide feasible alternatives through mobile based system or otherwise. This will ensure ticket sales are not affected in a region that is significantly different to many other established markets in this regard.
- In SSA, providing a very basic seat offering, and charging for any additional add-ons, will likely be the best strategy. That is, many of the inclusive offerings relating to

checked luggage, reserved seating, ability to change tickets, catering and the like may be utilised less frequently in a market where pricing is pivotal.

- Passenger mistrust and lack of education are two of the biggest obstacles for a new entrant in SSA. Therefore adhering to international safety and reliability standards, while ensuring that the market is kept abreast of this through the most effective means, is critical to the success of an LCC in SSA.
- Traditional forms of ancillary income are unlikely to apply in SSA, and therefore airlines will need to come up with more innovative methods, applicable to the regions in which they operate in order to secure additional revenues for the airline using the seat as a 'hook'.
- Both aircraft type and the manner in which it is funded, will also to some extent depend on the specific market in which the LCC in question, is operating. Overall, aiming to secure fuel efficient aircraft appears to be important to the long term sustainability of any carrier, and all attempts to do so, should be made. This should not however take place at the expense of placing the airline under financial distress early on, and so if funding is limited, plans should be made from the outset to secure more fuel efficient aircraft later on, and only utilise less efficient aircraft, initially for a limited period. Commonality of aircraft is however important when looking to save costs, and this should also be taken into consideration when looking to acquire more modern aircraft.

Overall, in addressing the research question, utilising a traditional or common LCC approach is likely to prove highly detrimental to the success of a LCC in SSA. While the experience gained in other markets however will provide much needed skills in negotiating this unfamiliar landscape, innovative approaches through a deeper understanding of country specific factors is likely to stand a new entrant in good stead. That is, LCCs first need to focus on the core critical success factors which apply in any market, namely, attracting new entrants to the market and achieving high load factors. Critical to success will be adapting the means to achieve these success factors by applying region suitable methods in the form of ticket sales systems, innovative ancillary offerings and the unique network structures.

As far as the three research propositions are concerned, they were also addressed in the outcome to the study, as follows:

8.5 Proposition 1

While there are factors that are universal to all markets in which LCCs operate, particularly SSA, its composition of various countries, climates, cultures and landscape, as well as relatively lower income per capita, ensures that its unique critical success factors, overall, are to some extent different to other regions of the world.

8.6 Proposition 2

Given SSA's unique attributes, there are factors, both positive and negative, which affect the likely success of an LCC in the region. From a negative point of view, and most notably, are the lack of market liberalisation, higher cost bases and lack of intra-African tourism. From a positive point of view however, there exists a massive potential market of would be travellers, who currently utilise ground transport to undertake treacherous routes daily across landscapes that take significantly longer than other forms of transport would achieve. In addition, the market remains largely underserviced in most instances, and competition, provided certain hurdles around landing right can be overcome, is likely to be relatively minimal for first movers.

8.7 Proposition 3

A unique business model has been proposed as summarised above which has been adapted to address the chances of survival of an LCC in SSA's unique circumstances and achieve the greatest sustainable success in the region.

8.8 Limitations of the Study

There are several limitations which have been identified relating to the research.

- Being a qualitative study, there remains a strong reliance on both primary and secondary qualitative data. From a primary point of view, Although the analysis of a small sample (<50) of SSA market participants to assess their preferences and habits with respect to air travel is not deemed to be statistically representative of the broader population, the results are assumed to provide a general view of regional preferences.
- From a secondary point of view, reliable literature on LCCs in less mature markets is limited, while that relating directly to SSA is even more limited. Therefore various assumptions had to be made by with respect to drawing parallels between mature

LCC markets and less mature LCC markets, with SSA. The robustness of these assumptions could have a significant impact on the outcome of the study.

- Subject matter experts may have been somewhat biased in their approach and responses, likely supporting their individual business model, and critical of those of their competitors. Without a large sample in this instance too, validation of the accuracy of their responses is limited.
- Certain factors which have been present in established and mature LCC markets that contributed to the success of those airlines might be irrelevant to the problem at hand. That is, emerging markets and SSA as a region might not share certain attributes or market defining factors that might have been largely responsible for LCC success in those regions. For example factors that are either natural, such as the UK being an island and therefore difficult to access by land transport, or structural such as in the US, having several individual markets that alone are sizeable enough to support an LCC by themselves. Therefore while it is imperative to separate factors that are highly specific to certain regions or markets from those that are generic critical success factors, it is a difficult task to do so. That is a limitation to the study as such factors might not be recognised as having been the primary reason for success, instead highlighting others which might be less critical.

8.9 Recommendations for further research

While this study is intended to identify critical success factors for LCCs in SSA, and whether such factors are achievable, the recommendations given in the study provide only a general and simplified business model, and cannot be specifically applied to every country and type of LCC. Therefore dependent on the countries in which an LCC intends to operate and the attributes of its specific model, any specific recommendations require further research.

Future studies on this subject should consider improving the study by:

- By increasing the sample size, and including several hundred respondents in the survey, if possible, more robust results relating to specific passenger attributes, in SSA, would likely be achieved. Such results could be utilised to formulate a model that addresses true passenger specific requirements more closely.
- Focussing on a specific region in SSA, such as West Africa, or the EAC, would be required to obtain better understanding of local regulations, customer behaviour

and the like, so as to obtain a specific, tailored business model be applied to that region.

- By investigating which BASAs currently exist in SSA, one would gain a better understanding of which specific countries would be best suited for housing prospective hubs, thereby facilitate a more widely serviced network. One could then attempt to match other country specific attributes which are supportive of an efficient and effective hub, such as not having a national airline as one example. This would allow one to better identify which countries are best suited to being hubs, as part of a hybrid type network.

9. References

- Airbus, 2014. Flying on demand 2014-2033,
- Alderighi and Piga, 2010. On-line Booking and Revenue Management : Evidence from a Low-Cost Airline,
- Le Bec, 2012. Low-cost airlines set sights on African skies News and Analysis. *The Africa Report*. Available at: http://www.theafricareport.com/News-Analysis/low-cost-airlines-set-sights-on-african-skies.html.
- Bhatti, M.N., Qureshi, M.I. and Zaman, K., 2010. *The Future of the Air Travel Industry*,
- Bingglei and Pompeo, 2002. Hyped Hopes for Europe. *The McKinsey Quarterly*, pp.87–98.
- Boeing, 2013. Current Market Outlook 2013 –2032,
- Box and Byus, 2005. Successful Low Cost Leadership. Journal of the International Academy for Case Studies.
- CAPA, 2014a. African LCC Fastjet accelerates expansion with three new bases and 10 more aircraft by end-2015. Available at: http://centreforaviation.com/analysis/african-lcc-fastjet-accelerates-expansion-with-three-new-bases-and-10-more-aircraft-by-end-2015-175190
- CAPA, 2014b. *Flydubai and Fastjet drive LCC growth in East Africa as Uganda gets its first taste of low fares*, Available at: http://centreforaviation.com/analysis/flydubai-and-fastjet-drive-lcc-growth-in-east-africa-as-uganda-gets-its-first-taste-of-low-fares-189041.
- CAPA Centre for Aviation, 2013. Aviation Data CAPA - Centre for Aviation. Available at: http://centreforaviation.com/data/.
- Christie, I. et al., 2011. Tourism in Africa and Improved Livelihoods,
- Cobb, 2005. Cobb. Academy of Strategic Management Journal, 4.
- Donovan, 2007. Yield management in the airline industry. 2007 International Symposium on Logistics and Industrial Informatics, 14(3).
- Fageda, Jiménez and Perdiguero, 2011. Price rivalry in airline markets: a study of a successful strategy of a network carrier against a low-cost carrier. *Journal of Transport Geography*, 19(4), pp.658–669.
- Flouris and Walker, 1995. The Financial Performance of Low-Cost and Full-Service Airlines in Times of Crisis. *Canadian Journal of Administrative Sciences*, 22(June).

- Ford, 2007. Low Cost Airlines Increase Market Share. *African Business*.
- Forsyth et al., 2010. *Airport Competition*, Ashgate Publishing Limited.
- Foster and Briceno-Garmendia, 2009. Africa's Infrastructure: A Time for Transformation.
- Genesis Analytics, 2006. *Genesis Analytics*,
- Graham, Papatheodorou and Forsyth, 2008. *Aviation and tourism: implications for leisure travel*, Ashgate. Available at: http://westminsterresearch.wmin.ac.uk/6168/.
- Gwilliam, 2011. Africa's Transport Infrastructure Directions in Development - General,
- Huefner, R.J., 2011. A Guide to Integrating Revenue Management and Capacity Analysis. *Management Accounting Quarterly*, 13(1), pp.40–46. Available at: http://search.ebscohost.com/login.aspx?direct=trueanddb=bthandAN=70268373andsite=ehost-liveandscope=site.
- Intervistas Consulting, 2014. Transforming intra - African air connectivity : the economic benefits of implementing the Yamoussoukro decision. , (July). Available at: http://www.iata.org/whatwedo/Documents/economics/InterVISTAS_AfricaLiberalisation_FinalReport_July2014.pdf.
- Ishutkina, M. and Hansman, R.J., 2008. Analysis of Interaction between Air Transportation and Economic Activity. *The 26th Congress of ICAS and 8th AIAA ATIO*, pp.1–18. Available at: http://arc.aiaa.org/doi/abs/10.2514/6.2008-8888.
- Kariuki, 2014. Daily Nation. *Daily Nation*. Available at: http://www.nation.co.ke/business/Tech/Internet-Usage-Kenya-Facebook-Twitter-Technology/-/1017288/2227156/-/yigk14z/-/index.html.
- Langkilde, 2013. Is Flying Safer Now. *Tourism Tattler*. Available at: http://www.tourismtattler.com/is-flying-safer-now/.
- Malighetti, Paleari and Redondo, 2010. *Low-Cost fare reponse to new entry*,
- Marcus and Anderson, 2006. Revenue Management for Low-Cost Carriers,
- Markson, 2005. Annual Report 2005,
- Mertens and Vowles, 2012. Southwest Effect. *Journal of Behavioral and Applied Management*, 14(1).
- MRO Network, 2014. Fly540 MRO Network. Available at: http://www.mro-network.com/tags/fly540.

- Ncube, Lufumpa and Kayizzi-Mugerwa, 2011. The middle of the Pyramid: Dynamics of the Middle Class in Africa. *African Development Bank*, p.24.
- O'Connell and Williams, 2005. Passengers' perceptions of low cost airlines and full service carriers. *Journal of Air Transport Management*.
- OAG, 2012. Africa Aviation Market Analysis,
- Olipra, 2012. The impact of low-cost carriers on tourism development in less famous destinations,
- Olusegun, 2014. Pcworld. *PCWorld*. Available at: http://www.pcworld.com/article/2692172/as-africa-internet-penetration-lags-experts-suggest-ways-to-spur-broadband-growth.html.
- Pandit, 1996. The Creation of Theory: A Recent Application of the Grounded Theory Method. *The Qualitative Report*, 2(4), Available at: http://www.nova.edu/ssss/QR/QR2-4/pandit.html/pandit.html.
- Piga and Bachis, 2006. Pricing strategies by European low cost carriers. *Journal of Air Transport Management*, 15.
- PricewaterhouseCoopers, 2013. *Africa gearing up*,
- Rubin and Joy, 2013. Where are the airlines headed. *The Journal of Consumer Affairs*, pp.1–6. Available at: papers3://publication/doi/10.5465/amr.2012,0097.
- Sabre Airline Solutions, 2010. The Evolution Of The Airline Business Model - Technology and business solutions that give low-cost carriers the freedom to grow their businesses as they choose.
- Schlumberger, C.E. and Weisskopf, N., 2014. Ready for Takeoff? The Potential for Low-Cost Carriers in Developing Countries, The World Bank Group.
- Seshadri and Henry, 2005. Air Deccan. *South Asian Journal of Management*, 12(4).
- Smith, N., 2013. Africa set to host seven aviation mega cities as traffic flows rise.pdf. *Business Day*. Available at:
- http://www.bdlive.co.za/business/transport/2013/10/30/africa-set-to-host-seven-aviation-mega-cities-as-traffic-flows-rise.
- Staisch, I., 2007. A Strategic Analysis of the Latest Entrant Into the South African Low-Cost Airline Industry - Mango,
- Standard Bank, 2012. *Africa Macro*,
- The Economist, 2013. What's holding back Africa's low-cost Airlines.
- The Event, 2013. africa improvements. *International Reviews Meeting*. Available at:

http://www.internationalmeetingsreview.com/sub-saharan-africa/africa%E2%80%99s-aviation-improvements-help-business-events-soar-96763.

- Thome, 2013. African Aviation - Challenges and Opportunities.
- TradeMark Southern Africa, 2011. Tanzania to upgrade 10 airports in infrastructure project. Available at: http://www.trademarksa.org/news/tanzania-upgrade-10-airports-infrastructure-project.
- Trubbach, N., 2013. Ryanair and other low-cost carriers eliminate rivals with unique fleet strategy,
- Vidović, A., Štimac, I. and Vince, D., 2013. Development of Business Models of Low-Cost Airlines. *International Journal for Traffic and Transport Engineering*, 3(1), pp.69–81.
- Wharton, 2013. Latin America : The Next Growth Market for Low-cost Air Carriers,
- Whitelegg, 2005. Flying for Peanuts. *The Journal of Transport History*, 26(2).
- Williams, 2007. Research Methods. *Journal of Business and Economic Research*, 5(3), pp.65–72.
- World Bank, 2015. Data | The World Bank. Available at: http://data.worldbank.org/.

Appendix A: Survey

Appendix B - One-on-One interviews detailed summary

Fastjet

Fastjet was formed on the back of Fly540, when Lonhro, the previous parent company, had looked to sell off the troubled airline and refocus on its core activities. With the airline business not being core to its other activities. Fastjet was formed on 29th November 2012. From the outset, the approach adopted was one of a true LCC model, quite different to the approach taken by Fly540 that was in theory just a smaller, legacy carrier utilising older aircraft, which usually had a smaller capacity, while it charged the same fares as legacy carriers.

Initially, it proved to be extremely challenging as far as Fastjet was concerned, in dealing with the respective authorities in each country in order to secure the necessary landing rights. This was particularly so in South Africa, when the Tanzanian government stepped in to support Fastjet through threatening SAA's landing rights in Tanzania, and so landing rights were granted. Fastjet initially launched with three core routes domestically in Tanzania, before branching out to flying the DAR to JNB route in Oct 2013 and DAR to LUN in Feb 2014. Fastjet currently services four domestic routes in Tanzania, as well as regionally from DAR to JNB, Lusaka, Harare and Entebbe.

Jambojet

The airline was started in 2014 as a fully owned subsidiary of Kenya Airways with a target of being a cheaper offering compared to existing legacy carriers in Kenya. The CEO was familiar with Kenya Airways and the Kenyan market due to having been seconded from KLM to Kenya Airways during 1996-1999 when the former had taken a share in the latter. The current Kenya Airways ownership structure comprises 26 percent government, 26 percent KLM, with the balance being listed publicly on the Nairobi Stock Exchange. The intended business model was initially one of a hybrid between an LCC and legacy carrier, however in September 2013, the airline adopted a true low cost model on the CEO's advice, with the model only deviating where necessary to allow for local circumstances. For the moment Jambojet only offers domestic services in Kenya, between Nairobi, Mombasa, Eldoret and Kisumu.

Kulula / Comair

When the South African airspace was deregulated in 1992, this opened the market for private entrants, the likes of Kulula, which was formed in 2001, being SSA's first LCC. Since then, the airline has diversified somewhat, having moved into other travel related offerings such as car hire and hotels, while also providing the back end technology for travel package providers, as well as travel fulfilment for the likes of Ebucks and Vitalty. Kulula operates a fleet of new fuel efficient Boeing 737s, targeting domestic routes in South Africa, although offering certain regional flights through codeshares with British Airways, its sister company, and Kenya Airways.

FlyAfrica

FlyAfrica, the newest entrant into the SSA market appears to have adopted the true LCC model, particularly akin to that of LCCs in Asia with different franchises combining to serve the overall market. According to FlyAfrica, they do not believe that any previous attempts by other LCCs in Africa have thus far truly adapted the model to local circumstances, yet feel their business model is proven to be successful in a region such as SSA. FlyAfrica currently offer flights from JNB to Harare, Victoria Falls and Windhoek.

Detailed Interview Summary

The Market

In Kulula's view, the relative small size of the middle class in SSA is a major challenge to any proposed regional LCC. While there are a substantial amount of aviation travelers in SSA, a vast number still utilise business class only, being business travelers, while most of the regions inhabitants simply don't utilise air travel at all. As an example, airline services between most countries and Nigeria or Ghana have large business class sections that are always full, and economy class is often under-utilised. Therefore until SSA has a significant middle class, to create sustainable volume, the airline does not believe that a true LCC is possible in the region. Attempts to establish LCCs in the region have thus far been half-hearted, with such airlines making use of 50 seater regional jets, in an attempt to keep load factors high. These models however have not worked. In addition, the investment required for an airline to operate effectively from inception is significant. Therefore one cannot simply sustain losses for any undetermined length of time in anticipation of the market arriving. This has lead to a reluctance from LCCs to enter the market and invest significantly,

and only a substantial increase in regional GDP, leading to a sustained growth of the middle class, will create the market required to facilitate the Success of LCCs in SSA.

According to FlyAfrica, market growth and increasing volume is dependent on elasticity of demand. In Africa there is a large untapped demand for low cost air travel, yet while the airline is looking to tap this sleeping giant, their investors are involved in a number of other infrastructure projects on the continent and therefore have a view which is broader than just aviation. Such a vision involves connecting people, facilitating trade and securing food supply. The airline is of the view that if one looks at SSA where air service just doesn't exist in any substantial form, would it make more sense for a carrier to begin operations targeting routes that are already being serviced, or to rather enter a market that is deficient, and create the market for aviation travel. By their own admission, the market at the moment doesn't exist, and therefore will require a significant amount of work to create it. Educating passengers is pivotal, while leveraging off the efforts of other LCCs who have failed, or are currently operating yet with less impetus, can prove to be an important weapon in gaining market share. FlyAfrica intends to disrupt the industry as much as possible, and while the they appreciate the views of Kulula relating to SSA's non-existent market, they opine that such views are from an airline which comes from an established market. That is, its focus is too narrow to appreciate the market potential in the region. Overall, FlyAfrica is unable to comprehend that such a large market remains completely untapped, especially where the demographics favour a young society, and therefore by educating them early, and enticing young people to fly, a new market is likely to be formed.

Fastjet undertook a survey with its passengers during the first six months of operation and the outcome was somewhat surprising, as 38 percent of all passengers surveyed had never even been into an airport let alone flown on an airplane. The conclusion drawn was that the airlines entrance into the market had stimulated a new market of travelers, and in effect created "a larger pool from which to fish." Furthermore Fastjet provided a level of international standard as far as services, reliability and safety were concerned, in a market where that was not necessarily the norm. In the first year of operation, 95 percent of flights were on time, only cancelling three flights in total, far superior that that of their competitors. In East Africa, a trend that has appeared is that passengers tend book tickets far later, any prefer doing so in person at the airport given suspicion relating to previous airlines which have exited the market, it is therefore imperative to build up trust as well as incentivise people as much as possible to book early, a win-win situation for passenger and

airline alike Through Fastjet's efforts in this regard despite common consumer behavior in this market, on average, passengers are booking 22 days in advance.

According to Jambojet, in Kenya, 15 million individual trips are taken per year from Nairobi to Mombasa, and while it is only 450km, the trip takes eight hours on average. Roads are generally dangerous, so much so that the government has banned night buses as a risk mitigation strategy. With inter-country tourism being somewhat limited, most people travel for personal reasons such as VFR, unerals, weddings and the like, yet with KQ fares remaining too high for the majority of the population, there remains a significant market to target. .The question remains however, how does one convince this group to travel, and book tickets in advance, utilising the internet. Many have preconceived ideas regarding air travel, not understanding the logistics or what's involved, and this is really what the challenge in Africa entails.

Jambojet undertook a survey in several large cities in Kenya in an effort to gain a better understanding of what forms of transport most people used. While almost all utilised ground transport of some kind, 40 percent of the respondents said they would fly when an airline could display safety and reliable. This sense of mistrust is also reflected in the fact that people don't generally book tickets well in advance despite the price advantage of doing so. Overall people don't understand this concept, either booking at the last minute, or misunderstanding that all the tickets are being sold at the advertised early booking price. Once this fare class has been exhausted, passengers are increasingly disappointed when the prevailing price has increased. Social media has proven very effective for educational purposes, as well as for explaining how ticket sales work. For Jambojet, it took sometime before the first bookings came in, as suspicion in Kenya remains an issue, and until one sees the actual aircraft on the ground, potential passengers are apprehensive.

Ownership Structure

Fastjet's view is that having an affiliation to a legacy carrier is more of a hindrance than it is a benefit. Rather what has occurred in instances where legacy carriers create LCCs is that LCCs tend to fail due to the relationship, or are propped up by their parent, which is inefficient and anti-competitive. True cost separation from the parent proves nearly impossible, and therefore while there might be some benefits, they are outweighed by the negatives. The question remains how a carrier is able to become truly low cost if attached to a legacy carrier; as to truly practice the LCC model, the airlines need to be completely divorced from, and even compete with, legacy carriers on certain routes.

Jambojet remains a fully owned subsidiary of KQ, with the legacy carrier's ownership structure comprising 26 percent by the Kenyan Government, 26 percent by KLM, with the balance being listed publicly on the Nairobi Stock Exchange. Jambojet are of the opinion that in SSA, it remains very difficult for an LCC to survive without a link to major carrier, a situation which is vastly different from Europe. The benefits of being linked to a legacy carrier are mainly political, which is required in order to obtain landing rights in most countries In addition, the LCC is able to procure goods and services as part of a larger entity, bringing down costs such as those relating to fuel, maintenance, aircraft and ground handling, as economies of scale play a role. As far as Jambojet is concerned, KQ provides many of the required services such as finance, legal, treasury and call centre services, which without this arrangement, Jambojet would be required to establish dedicated departments for these tasks. By Jambojet's own admission however, there remains certain pitfalls related to being affiliated to a legacy carrier. The higher cost base of Kenya airways does flow into that of Jambojet, such as Kenya Airway's use of unionised pilots. Overall however he believes the positives outweigh the negatives.

FlyAfrica is a private company registered in Mauritius. Licenses are held and the trademark registered, in Mauritius, while a separate entity which leases aircraft to the various intended FlyAfrica franchises, is also registered in Mauritius. While the airline has a project office in South Africa, no local registration exists, with the office being utilised to attract talent as expats prefer the city to other African cities in general, while it remains convenient due to the air service the city offers. The intended model of FlyAfrica is similar to that of AirAsia, whereby a separate franchise is registered locally in certain countries which provide benefits as far as bilaterals and landing rights are concerned for point to point services. In addition, economies of scale can be achieved by combining the buying power of the various franchises.

FlyAfrica is of the view that despite Fastjet's claim that they are structured in the same manner, they are not. Rather the holding company is registered in the UK and managed from London. With Africa being tied up with many bilaterals, it remains very difficult to maximise utilization as institutional inhibitors are a constraint. The model that a LCC employs therefore needs to circumvent the politics, something that franchise model is trying to achieve, and its therefore surprising that other haven't adopted this model to the same extent

In Kululas view, a hub-and-spoke system could provide an initial entrance into the regional arena, highlighting an example where Malawi once considered such a notion, to create a hub servicing the surrounding region, even though it really has no real domestic market of its own. While this would be somewhat of a shift from the traditional LCC model which attempts to offer direct point to point service, the LCC model could still persist in such a case. For example, the LCC could avoid offering costly services associated with legacy carrier travel such as luggage being checked through to final destination, but rather passengers would have to collect and recheck it at each stop, and that perfect connections are not a prerequisite if substantial cost savings are passed onto customers. This model would however be highly dependent on where the LCC decided to base the hub, as while the service offering would be somewhat comprehensive than that of the legacy carrier offering, a sort of hybrid model could prove to be successful with the right implementation.

Furthermore, Kulula does not believe that a LCCs needs to be tied to a legacy carrier in order to be successful. Quite the contrary, Mango would do better without South African Airways as its parent, and while Kulula is part of Comair / BA, it operates completely independently of the latter, based on its own merits, however still benefitting from economies of scale. While Mango claims that all transactions with SAA are at arm's length to appease competition authorities, they simply land up duplicating cost centres which accumulate additional cost. Recently, Mango has stated that it intends to share services with tits parent once again, but now SAA's inefficiencies will simply flow into the LCC.

FlyAfrica is of the opinion, and emphatically so, that being tied to a legacy carrier is a significant downfall for an LCC. Cross subsidization of Mango and SAA is case in point. LCCs without this connection to a legacy carrier are in a much stronger position, as they are not tied into any long term contracts, and therefore have far greater flexibility. Noting Jambojet as a specific example, KQ also are unlikely to ever allow them to grow into profitable routes.

Routes

Fastjet, on inception, launched with three core routes domestically in Tanzania. The airline then branched out to flying the DAR to JNB route in Oct 2013 and DAR to LUN in Feb 2014. It was however extremely challenging dealing with authorities in each country in order to secure the necessary landing rights as local authorities in South Africa presented every barrier possible for the airline. Only when the Tanzanian government stepped in to support Fastjet through threatening SAA's landing rights in Tanzania, were landing rights granted.

This reaffirms the need for local support through local ownership in each home base. Overall politics remain the largest obstacle when choosing routes in SSA, as despite promises to liberalise the skies, open markets and ensure competitive playing fields, very little follow through has taken place. Rather countries continue to subsidise their own national carriers to no end despite losses and inefficiencies. Similarly to the case in Tanzania, Fastjet required that the Zambian government support them against South African authorities by restricting SAA to LUN if they in turn didn't open the same route to Fastjet.

As far as picking routes are concerned, Fastjet first analyses existing traffic on a route. The route DAR – JNB was chosen at inception based on the strong demand on this route at the time, as shown by the demand for SAA's route between these cities, being the only legacy carrier providing this service. That said, route picking is a challenging exercise, especially when statistical analysis is performed as data in SSA is historically unreliable. Fastjet has therefore undertaken to develop its own statistical interaction model which accounts for local cultures, operational requirements at the location, and several others factors which contribute to the model's outcome. It applies a weighting criteria to the individual elements scoring both quantitative and qualitative information, and in backtesting, the model was found to be surprisingly accurate, becoming even more accurate as additional data is collected over time. Fastjet also looks to obtain feedback from passengers on social media which is further used to populate the model with data. Based on this route picking strategy, Fastjet report that the DAR – LUN route is above the required capacity and has been from the start, while the DAR to Mbeya route has been an overnight success.

Kulula on the other hard are of the view that the utilization of the two A320s that Fastjet have, is not being maximised at all. Kulula believe that the midnight flight from DAR to JNB is not ideal due to times the route flies, while the route from DAR to MWZ, is similarly underutilised. SAA has simply come in and lowered prices on the DAR-JNB route, and filled up capacity to eliminate competition. It is pivotal that the JNB – DAR route is full all the time, as the airline lands up taking an aircraft out of circulation for an entire day and it therefore has a very high opportunity cost.

As far as Jambojet is concerned, primary to their route selection process is operational requirements and can they be satisfied at the applicable location or airport. Secondary to this is the air traffic statistics and how busy the existing carriers on that specific route are. Once both of these factors have been considered, one needs to consider price elasticity, as

even if one lowers the price, will demand increase on that specific route. As an example, if most passengers on a route work for an NGO such as the United Nations, is demand expected to increase, if most passengers are price inelastic. One also needs to better understand what type of passengers a certain route might attract, for example in Kenya vehicle traders can make up a significant portion of Jambojet's customer base as their profession usually requires that the trader collects the car from Mombasa port, and then drives it back to another city, such as Nairobi Route by route is assessed based on business or tourism demand, and each individual attribute is gauged.

Kulula selects routes on a different basis, especially given its more domestic focus. With South African volumes being somewhat saturated and passenger numbers still below the 2008 levels, GDP growth remains pivotal to air travel demand. Therefore in the absence of strong economic growth, caution is being exercised. In Kulula's opinion, usually an airline looks to grow existing routes first, by putting a larger aircraft on that route as opposed to starting new routes. Codeshares are also often utilised on new routes initially, and so while one airline operates the route, the other sells tickets and earns revenue, simply buying tickets in bulk at a reduced cost from the carrier operating the route, and then onselling them to passengers without using its own aircraft. Once growth materialises, with the consent of the airline operating the route, the second might place an aircraft on that route having established that the demand is there.

In Kulula's opinion, it remains almost impossible to work with government owned airlines, and so one can only tie up with private carriers, of which very few exist. Ideally, Kulula's strategy is to approach struggling national carriers to assist them, by bringing in technology, know-how and experience. Furthermore, with SAA being the dominant player in South Africa, there remains a gap for other international airlines to enter the South African market and take market share on routes on which SAA flies between South Africa and their respective countries. SAA however has a strong local ticket distribution network, and therefore unless a foreign airline works with a local partner, such as Kulula, it is very difficult to take market share from the incumbent. An example would be LAM of Mozambique typing up with Comair to sell tickets on the JNB to Maputo route, but due to protectionism from the Mozambiquan government, even though such a partnership would be beneficial, it has not materialises. Overall politics remain a major problem in SSA.

For Kulula, planes need to be 80 percent full, on average, in order to make the airline viable. Requiring around six flights or ten hours of flying time per day is also required to

make it viable. Therefore empty seats and delays can prove very costly indeed. In South Africa, turnaround times are 45 minutes and 30 minutes at Johannesburg, and the country's other airports respectively, yet as a comparison, turnaround times are more than one hour in Victoria and two hours in Ndola, in Zambia. Kulula believe this has to be taken into consideration picking routes, as certain routes might lead to additional, unwarranted costs being incurred.

FlyAFrica's view is somewhat simpler; fly any routes that make commercial sense, being unrestricted in one's view with less focus on operational factors and more focus on economic ones.

Costs

Fastjet's philosophy is to outsource as much as possible such as maintenance, fuel procurement and its call centre functionality, with only core functions such as yield management and financial accounting being handled internally, and then farmed out to the different operating offices in country. The ticketing system used by the airline however was inherited from Fly540 and remains outdated, not being dynamic in nature and not ideally suited to Fastjet's business. Given the cost associated with overhauling the system, a decision has been made to utilise the existing system for the time being despite the drawbacks. In Jambojet's view, the costs incurred by an LCC in SSA are largely the same as those incurred by legacy carriers. Albeit small, there are some areas to save costs, such as through the manner in which most tickets are distributed. For this reason, Jambojet puts significant efforts into targeting customers through the internet, having been successful in their pursuits, and having reduced distribution costs by 80 percent compared to their parent. In addition, the airline utilises only three cabin crew instead of four or five, and outsources all its catering needs to avoid the high costs of running such an operation in house. In total, Jambojet employs 24 people, which includes only more than one staff member in the commercial, sales and ecommerce services, which are not outsourced. In addition, only one staff member per discipline manages outsourced contracts as a means to keep the staff count low. As an example, one staff member handles the entire maintenance function which is outsourced to KQ. Through this employee type model, ties to unions are non-existent or low at best, reducing overall staff costs. Further, despite KQ's ownership of Jambojet, all transactions are undertaken at arm's length, ensuring that a traditional supplier-customer relationship is constantly upheld.

FlyAfrica reiterated the need to reduce costs as much as possible in Africa, in the same manner that LCCs in other markets have done so. The significant reduction in oil prices is currently viewed as an absolute windfall for LCCs in particular, stating that if oil prices were even currently $85 or even $95 per barrel (currently they are significantly less), Onetime Airlines, a South African and small regional LCC that recently filed for bankruptcy, would still be in business today. This highlights how crucial oil prices are to the functioning of an airline, as when oil prices are elevated, as they have been for the last several years, the need for modern aircraft and larger funding requires was far more important. With oil prices however currently being at multi-year lows, a carrier can utilise a significantly cheaper and older aircraft that largely performs the same task as a brand new modern aircraft. That all being said, oil prices will at some stage increase in FlyAfrica's opinion, and therefore, while some cost savings are accruing to carriers, they should be planning ahead by modernising their fleets in a similar manner to what Kulula are currently doing.

FlyAfrica utilise their shareholders, wherever possibly, to lobby governments to reduce costs that are significantly high, and not justifiable. While this can prove challenging, some successes have been achieved when a compelling case has been brought in front of authorities displaying the proven case that if costs are reduced, volumes will increase and therefore additional taxes won't be necessary. Certain governments have proven to be receptive. In addition, as far as the airline is concerned, the balance between insourcing and outsourcing is a critical success factor. When demand is lower, the airline requires flexibility which allows it to terminate contracts at short notice if necessary, and while this might command a premium to do so, such flexibility could prove pivotal during more difficult times.

According to Kulula, aviation costs in SSA are relatively higher than established markets, and until such time as economies of scale can be achieved, one cannot remedy this situation. There is low utilization of airports, equipment, fuel trucks, and the like, which lead to higher costs for all concerned. Regarding outsourcing of services, it is not necessary to outsource all services to achieve cost savings, as this could actually have a detrimental effect on costs in the long term. Outsourcing is seen to be a short term solution to keeping costs low, and bringing about investor returns, however not investing in catering assets or flight simulators leads to higher costs being paid over the medium to longer term. What is common to many LCCs globally is that almost all cost are initially outsourced, but in such cases, the initial shareholders tend to look to maximise returns in the first five years prior to

selling out, and therefore outsourcing is used to achieve this. Also in SSA specifically, outsourcing is likely to be both more costly and inefficient given that lack of market depth. That said, one area of the business that Kulula does outsource is its GDS, as while it used to make use of an in-house ticketing system, this has been outsourced in order to keep up with advances in technology. The platform for care hire and hotels is however in-house and they intent to maintain this.

Ticket Prices

The Fastjet model, as far as ticket prices are concerned, is to aim to offer fares for the rough equivalent of $20, for all seats, on all routes, prior to third party charges when sales first commence. This is in order to stimulate volume initially on each flight, yet once a fair class is filled, of which there are twelve, it moves to the next level until that one is similarly fully allocated.

According to Jambojet, the manner in which it prices its tickets is quite different, considering every flight as being a different market in itself. That is, the Tuesday night flight is a different market to the Friday or Monday night flight according to the passenger types travelling for business or leisure. One therefore needs to look at each in isolations, and ascertain which flights will be in high demand and which really require yield management. Therefore only a certain proportion of flights have discounts for booking early. On each and every flight there are those who will fly regardless of the price and therefore one wants to avoid discounting tickets too significantly. While Jambojet considers yield management to be effective at selling seats, the revenue from the cheapest seats does not cover costs adequately and therefore a focus on higher fares is pivotal. Also, yield management is not considered to be a perfect science, especially initially as it takes time to build up reliable data which really enables one to manage the yield management system effectively. That said, Jambojet also acknowledge that yield management provides a different benefit in SSA, as passengers tend to prefer not to book tickets long in advance, and hence the model is an attempt to stimulate sales early. In addition, in order to infer and promote the LCC model, it is also a public relations exercise to gain publicity and market attention by selling tickets early at such a low price.

Kulula has recently begun to offer completely unbundled seats, that is, a passenger purchases the seat only, and anything else may be acquired for an additional cost. This accommodates very cheap seats being on offer, yet the pitfalls of this approach is that when stripping all basic ancillaries out, an airline might have to further discount the ticket

price. This is due to the market expecting such a basic seat offering to be much cheaper that a normal ticket including such ancillaries like catering and checked luggage, yet this isn't necessarily the case... That is, basic ancillaries don't add that much to the overall ticket price and therefore stripping them out provides little overall saving to the passenger. Furthermore, charging the passenger additional for these services adds little revenue for the airline. Therefore the best way to earn ancillary revenue is to sell items or services that an airline normally wouldn't, and which wouldn't be stripped out anyway such as holiday packages and insurance.

With FlyAfrica, the ticket price is completely unpacked, whereby one buys the seat, buys the seat allocation, as well as the amount of luggage to check. Whatever can be unpacked, is unpacked, so basically the seat is the hook, with the airline then looking to earn revenue on top of that with the additional ancillaries. The airline also advertises that no fuel surcharge will be levied, which is largely an attempt to draw people's attention to this practice by their competitors. They feel that while their competitors misrepresent the charge as a fuel surcharge, it simply goes toward growing revenues, with the airline disguising it as an additional tax. Overall FlyAfrica are of the view that ticket prices in SSA can be brought down to the level required to really stimulate the market, as there is major price elasticity in this market and volumes will increase substantially with the right stimulation.

Ticket Distribution

The relatively limited amount of internet penetration in the countries currently being served by Fastjet, apart from South Africa, present additional obstacles to the airline. In generally, most countries in SSA are predominantly cash based economies, and there is therefore an additional cost requirement for the airline given the need for ticketing offices that can accommodate this. This requires the use of a GDS system such as Amadeus or Sabre, leading to additional cost being incurred. That said, when the website is utilised to book tickets, there is an 80 percent conversion rate as the difficulty to actually get online commands more intent on the part of the passenger, as passengers are unlikely to just be browsing. Mpesa is also widely utilised by passengers, and at times, 30 percent of all revenue comes through the Mpesa payment system. There are also no transaction fees incurred by the airline through Mpesa, and therefore for all parties concerned, this remains a preferred way to make payment. Fastjet also makes use of pop up shops which sell tickets using Mpesa, a strategy that originated from the notion of going to the market instead of

waiting for the market to come to you. This has proven most successful in Tanzania, which remains the airlines largest market. Given that it is largely cash driven, the airline needs to make provision for this by not waiting for potential passengers to log onto the website, but by taking the market to them.

Jambojet has deviated from the true LCC model by setting up sales offices, having five in Nairobi, two in Mombasa and two in Kisimu, apart from the sales offices at the airports themselves. They have however decided not to utilise a GDS due to its exceptionally high cost. Internet sales still account for 40 percent of all sales, which in itself is high for SSA even though Kenya does have greater internet penetration than many other markets in the region. The other 50 percent is split between the call center (10 percent), and the sales offices mentioned (remaining 40 percent). In terms of paying for tickets, Mpesa is used 45 percent of the time, with credit cards making up 20 percent, yet require additional verification due to very high rates of fraud. The remaining 35 percent is paid for in cash.

Kulula charges the passengers for the GDS booking fee, and therefore while tickets are more expensive at a travel agent, which is viewed negatively by the agents, Kulula is indifferent to internet or agent sales. The GDS fee is approximately $5 a booking, which does stimulate additional internet traffic to some extent, in a country where penetration is significantly higher than other countries in SSA. This is in stark comparison to countries such as Mozambique, where almost the entire market of airline tickets is sold through travel agents given low internet penetration or access to credit cards. Similarly low penetration in other countries, coupled with the credit card issue poses major problems to the mass uptake of internet bookings, and the subsequent cost savings for the airline associated with this method of booking.

FlyAfrica utilises an existing network of agents, and therefore outsources the non-internet distribution function in totality to one service provider. Their model is that their expertise is providing airline seats and not distributing tickets, and therefore this function is best outsourced. They are therefore less concerned by the manner in which the tickets are sold, however with tickets being a high ticket article, they do not distribute through newsagents or vendors, however in time this model might be considered. Mobile ticket distribution through cellular telephones is also being explored given high mobile penetration rates. The airline utilises both a GDS and web based distribution system despite the cost of the former, however in the same manner that Kulula do so, FlyAfrica passes the cost relating to

booking on the GDS onto the passenger. Similarly if the travel agent sells the ticket to the passenger, they are required to add on the commission, as the airline does not fit the bill.

Secondary Airports

Jambojet's view is that as far as utilising secondary airports are concerned, SSA just doesn't have appropriate options like in many parts of the world and therefore the secondary airport cost savings approach is immaterial.

In Kulula's view, the revenues streams that Ryanair earns from secondary airports which amounts to a percentage of car rentals and food sales, just for bringing passengers there are pivotal to its success. Yet that is a model that just won't work in SSA given the lack of secondary airports, while primary airports remain underutilised. Therefore other innovative approaches are required in the SSA setting.

Aircraft

By Fastjet's own admission, currently the airline is over-fleeted with their aircraft being underutilised. It remains preferable to utilise aircraft for 11.5 hours per day, which is currently not the case. Regarding their choice of aircraft, Fastjet utilise Airbus A319s and while an Embraer E119 or E195 would have been better suited to the runways in SSA, these aircraft are more expensive per seat, to run. At the time of selecting aircraft, the airline was confident in its ability to stimulate demand, and therefore decided to acquire slightly larger aircraft which hold 177 people. While Boeing 737s are more common in in SSA, the lease costs compared to an A319 are substantial as there is an oversupply of second hand A319s coming out of EasyJet.. Currently Fastjet has three aircraft, with one acting as a spare due to lower than expected demand, as opposed to a pure redundancy option. This is an undesirable situation as they hope to have all three aircraft being used regularly.

Jambojet currently uses three B737-300s which have been provided by KQ. Currently two are in operation with the third remaining as backup given the age of the aircraft and the possibility of break down. Older aircraft tend to lead to greater delays due to breakdowns and required maintenance becomes more frequent. What the airline has noted however is that in SSA, delays and breakdowns make passengers increasingly suspicious, and delays create an impression that the aircraft are unsafe. Therefore delays can be costly from both an operational and reputational point of view, and with airports in SSA not being congested as far as Jambojet is concerned, delays are really only due to mechanical issues. It is therefore essential to have a spare aircraft at all times.

Furthermore, according to the airline, it's essential that the capacity of the aircraft chosen by the airline, can indeed be filled. That is, purchasing an aircraft which is too large in the hope that the market will grow could prove very costly until such time as those seats are filled. For Jambojet's purposes, the likes of an A319 or A320 (150/186 seats), and Boeing 737-300 or 737 -700 are ideal. In the 737, 149 seats is the maximum, however Jambojet can only fit 142 seats per aircraft as the planes came from KQ where the maximum was not exploited. In addition, aircraft capacity needs to be suitable for both low fares which are sold well in advance, as well as the higher ones that come in within days of the actual flight. Both the aircraft types mentioned have been proven to meet this demand, as there are not many other jet aircraft of that size available, and while Embraer of Brazil are working on one, it remains sometime before it is released.

According to Kulula, is it essential that an airline utilises the latest aircraft in order to keep fuel costs as low as possible. Usually airlines which go out of business do so using the same aircraft they started with, pointing to the fact that their initial model, and possible aircraft of choice were not right from the start. Being caught in a trap, the airline was never able to purchase new, fuel efficient, reliable aircraft, which continued to take its tolls on operating cash flows Regarding the aircraft make of choice, the specific routes flown are pivotal in determining what aircraft to utilise. While smaller aircraft are cheaper upfront, the running cost per seat are significantly higher when compared to say B737 or Airbus A320. That said, if passenger numbers only justify a fifty seater aircraft, losses will be substantial if larger aircraft are utilised. Furthermore, at times of high oil prices, utilising older less fuel efficient aircraft leads to significantly higher overall costs running costs. It therefore remains pivotal to balance demand and fuel / maintenance costs, when electing which aircraft to utilise.

Regarding where aircraft should be bought or leased, Kulula is of the opinion that, one needs to consider market specific factors such as local interest rates, while balancing them with and the airlines own ability to leverage its balance sheet based on short and long term factors. If an airline intends to operate aircraft for a long period such as 20 or 30 years, then all else equal, it remains better to purchase the aircraft as with a lease you have effectively paid for the aircraft in 10 years. If however a bridge is required between a current fleet and delivery of new aircraft, it remains better to lease the aircraft. Another factor to consider is the level of flexibility that one has with respect to replacing the fleet later, given the risk involved in replacing an entire fleet at once, only being required to do the same at a later stage. Airlines therefore tend to both buy and lease aircraft, with the exact proportions

differing per jurisdiction. Overall, one's own balance sheet and individual gearing, as well as local tax issues, will play a significant part in an airlines individual airline finance model of choice.

Regarding specific type of aircraft utilised by FlyAfrica, unit costs are analysed, with fuel burn assessed versus aircraft capacity and utilization. Having one common aircraft within the group remains pivotal however, and therefore not type, but commonality is important, as spares, to training, are uniform, assisting with cost minimsation. On the other hand, the financing choice relating to outright purchase or lease depends on each franchises unique financial gearing and funding structure. FlyAfrica has established its own leasing company within the group, and each franchise leases aircraft from that entity. It also provides funding to franchises for the purposes of outright purchase of aircraft directly from the manufacturer. This allows certain franchises to purchase new aircraft while also leasing older aircraft to other franchises. Overall the structure that has been set up offers flexibility to each franchise, which depends on individual circumstances which are influenced and affected by the country and markets in which they operate

Ancillary Revenue

Fastjet noted that certain LCCs have actually incurred losses from ticket sales while profiting from ancillary revenues. This underlies the major importance of these revenues which are in fact the low hanging fruit once an air ticket has been sold to a passenger. It's therefore remains pivotal to have a well-functioning website, as regardless of where the ticket is actually purchased, be it a ticket counter, a vendor, travel agent or online, ancillary purchases can be made later on the internet. Examples of ancillaries range from the likes of checked luggage, itinerary changes and food. That said, in a SSA context, typical revenues earned by carriers in the more developed markets such as from hotels, car hire or car parking, are negligible. These extra ancillary type revenues are expected to remain significantly smaller in SSA as a percentage of revenues compared to Europe or US markets, and therefore any new entrant looking to diversify revenue streams, or leverage off tickets sold, would need new and innovative ideas to stimulate ancillary revenue in the region.

Jambojet remain increasingly apprehensive to offer any a kind of extra ancillaries at the start, as this could confuse the less seasoned airline traveller. The basic ancillaries associated with the actual air travel, such as additional suitcases, selecting seats and charging for food is certainly offered by the airline, and in response to local preferences, given common uncertainty exhibited by passengers when booking tickets in SSA, a small fee

is charged by the airline for holding a ticket for 24 hours without payment. Car rental, hotels and the like are not seen to be suitable at all. Furthermore, no advertising revenue is earned from other brands until such time as the Jambojet brand is established.

In the case of FlyAfrica, ancillary income such as those offered in other parts of the world will be introduced at a later stage, once traffic is generated on the site. System have already been developed to accommodate the sale of such extra ancillaries, yet they await the right time for implementation.

Competition

Jambojet anticipate that the Tanzanian market will remain challenging for Fastjet and particularly so on the JNB -DAR route. In their view, if the airline operating on such a route is not a legacy carrier from South Africa or Tanzania, nor a South African registered company, it will remain challenging to secure preferred landing rights in JNB. Further, the airline will have to spend significant sums of money to gain exposure and convince passengers to utilise the alternative, which might be less attractive due to the flight times offered. SAA can simply introduce extra frequencies, as well as lowering lower ticket prices in order to squeeze Fastjet out of the market.

Kulula are of the opinion that the pricing offered by SAA and Mango is neither realistic nor market related. In SSA, private carriers are forced to compete against government owned national carriers that have no regard for realistic pricing, and therefore smaller, private, and more efficient players are forced to exit the market. Furthermore, protectionism of national carriers continues to be a massive problem as local governments limit landing rights for competing airlines. While there has been limited liberalization on the continent in countries such as Kenya and Botswana, many other markets are completely closed, such as Mozambique. Angola remains the worst in this sense, whereby even if rights are secured, one is required to come to a commercial decision with TAAG, the local Angolan airline. Landing rights are very much reciprocal, and therefore South Africa will not approve landing rights to foreign carriers unless the other country does the same for SAA or Mango. That said, while total liberalization could however deal a deadly blow to local airlines as the likes of Emirates would have free reign in the region, current conditions are untenable and too extreme in the other direction whereby liberalization is largely absent.

FlyAfrica has chosen to avoid highly competitive routes such as the domestic ones in South Africa given that airlines such as Kulula have the financial resources to aggressively defend

their market and push new entrants out. Also as far as the industry lifecycle is concerned, the South Africa market is extremely mature, and has actually plateaued to a large extent. FlyAfrica will only look to enter the South African market when the time is right, and despite the size of this market, the airline will treating South Africa in the exact same manner it does in any other market when assessing the prospects for entrance.

Brand

Kulula believes that despite popular perception, people in SSA are actually extremely brand conscious, as in South Africa, as an example, bankers won't fly Kulula in general as it seen to create a negative perception with the bank's clients. Kulula is of the opinion however that the airline's culture, and the manner in which it is portrayed in flight is less important, as long as an image of safety and reliability is always upheld. Guarding those two aspects are absolutely pivotal to an airlines success while culture is not considered to be a critical success factor in SSA.

For Jambojet, a factor which is somewhat unexpected, is that despite per capita incomes being significantly lower in SSA compared to Europe as an example, if you are seen to be travelling low cost in SSA, the perception is that you are not well off. Therefore existing travelers are not the market for LCCs. This is not the case in Europe or the US where cost saving is pivotal on short haul flights and many business people utilise the likes of Ryanair and EasyJet in preference over legacy carriers. Therefore in SSA, LCCs should look to attract those who have never flown before, and who remain less brand conscious.

Concluding Remarks

In Fastjet's view, adopting a cookie cutter approach from the European LCC model and expecting it to be equally effective in SSA would be commercial suicide. Internet penetration is much lower and therefore sales offices are required. Secondary airports in effect don't exist and therefore landing costs are higher, and will remain so, while potential revenue streams from those airports are eliminated. That said, there is a case for working with government in developing new locations, as the airline did when identifying strong local demand for flights from DAR to Mbeya, and with an existing runway being there, despite it requiring extension, the location was developed by government into a new commercial airport. Other locations in the same frame have been identified, and Fastjet is working with the Government of Tanzania to develop these airports and allow its A319 to land. Furthermore safety is a given in Europe, however this is not so in SSA. One needs to

therefore ensure that safety standards are communicated in a clearer manner in SSA, ensuring passengers are aware of the rigorous standards upheld by the likes of a Fastjet and other airlines, which abide by such international regulations.

Jambojet's view is that many LCCs in the US in particular have failed because legacy carriers attempted to set up LCCs which were simply managed by another department, rather than being a complete separation from the legacy parent. In Europe, he believes that first mover advantage was pivotal for the likes of Ryanair and EasyJet, who were the true pioneers in low cost business and therefore were able to establish a substantial head start to streamline their business models and secure new volume. Airlines entering later had to effectively share the remaining market share amongst themselves, and when there are too many players, the smaller ones inevitably disappear. Overall not many markets are really suitable to sustain LCCs as has been shown in other parts of the world where LCCs have failed. In order for an LCC to be successful, it firstly needs steady and sustainable volume, which includes leisure travelers, as this remains the segment responsible for the most of the RPKS globally. Nigeria remains a good example of a strong potential market, yet many other factors in the country make it very difficult to run an airline efficiently, and at low cost. In South Africa on the other hand, despite the market being well established with solid volumes, both 1time Airlines and VelvetSky were unable to compete with the two incumbents being Kulula and Mango, and therefore failed not having the financial means to compete. Currently with only two LCCs left, profits have returned and ticket prices have increased significantly. Overall LCCs in South Africa are not deemed to be true LCCs, as while they might be low cost, they are not low fare. When a third entrant enters the market, being either Fastjet or FlySafair, (as the latter have recently done) all the participants are likely to sustain difficulties once again as competition for market share resumes.

Further, in Jambojet's view, in SSA, the income per capita is significantly lower than Western Europe or the US, this notwithstanding the fact that SSA's middle class has expanded significantly in recent years. In order to be successful, an LCC has to convince those utilising some form of ground transport to utilise LCCs, otherwise the likes of a Jambojet will simply land up cannabalising air traffic from KQ. Therefore Jambojet's model is exactly this - attempting to attract new flyers to the aviation market.

Kulula are of the belief that the main reasons why LCCs fail in general is because the model relies on attracting passengers who couldn't afford to travel previously, and if LCCs don't

attract this specific market, they are unable to fill planes. Seating density is also pivotal in increasing profits given a high fixed cost base, this considering that by not offering basic ancillaries that a legacy carrier does such as free catering only provides minimal cost benefit. Therefore planes need to be full all the time, and the model tends to only be successful in developed countries that have large middle classes that might have flown previously on special occasions, yet now fly regularly.

Furthermore, Kulula believes that SSA remains a very challenging place to do business, given the array of countries, cultures and interests. The EU on the other hand has several airlines that have been successful due to consolidation, with European airspace being one large market. In SSA each country insists on having their own airspace regulations and air traffic control regime which is a clear duplication of services. If countries battle with consolidating simple airspace regulations and services, consolidating an airline will prove very challenging indeed. Air France actually attempted to create a regional West African carrier sometime back, and while all stakeholders initially agreed, when it came down to choosing where to domicile the head office, no one could agree, and so the airline was never formed.

FlyAfrica's model for success for an LCC is rather simple in their opinion. The key factor, and most important attribute for the success of an airline in SSA is attracting strong talent, being both management and employees to run the airline. Having strong supportive shareholders, is another.