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FACTORS CHARACTERIZING THE UNDERPERFORMANCE OF AIRLINES REGISTERED IN ZAMBIA: AN ANALYSIS OF THE IMPORTANCE OF AIR TRANSPORT IN SUSTAINABLE DEVELOPMENT

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ABSTRACT

This study was carried out during the period 2016 – 2017 to determine factors characterizing the underperformance of locally registered airlines. The objectives of the study were to establish; i) operational length of each airline, ii) local and international routes operated, iii) major operational cost areas, and iv) influence of policy on operations. Questionnaire survey, personal interview with key staff and intensive review of literature were used to primary and secondary collect data. Results obtained showed that change in government policy and government interference in the operations of the national airline was the main factor influencing the liquidation of Zambia Airways in 1994, while fuel costs was the main factor in the general operational costs of other locally registered airlines. It was concluded that a thorough study of the industry is required by government or the private sector before registering an airline. Since fuel was found to be the major factor in operational costs, purchasing or leasing fuel efficient aircrafts was encouraged. Formulation of policy to incentivise locally operated airlines would buttress costs and promote the development of tourism. Further research is required to determine the socio-economic benefits of re-establishing a national airline including multiplier effects such as food caterers, aircraft cleaning services, fuelling services, travel agencies, hotels, car rentals, and other businesses in the travel and tourism industry.

Keywords: Airline, fuel cost, passenger, policy, route, locally registered

INTRODUCTION

An airline is a company which has an air operating certificate or license issued by a state aviation body. In Zambia, airlines are registered under the Civil Aviation Act No 5 of 2016 and Act No 7 of 2012 (GRZ 2012; 2016), and provide air transport services to people and freight. Such companies may form partnerships or alliances with other airlines for codeshare agreements. They can operate as full-service airlines; intercontinental, international, regional or domestic and can be scheduled or chartered.

Currently, air transport has expanded across all continents connecting places previously hard to reach, thereby reducing time needed to move people and goods altering the concept of distance (IATA, 2006).

Air travel has therefore, opened up opportunities that did not previously exist in Africa and provided a great potential to foster sustainable development in Africa. It is now one of the driving forces of regional integration on all continents. For example, air transport can facilitate and boost intra-African business, trade, tourism as well as cultural exchange. Developing the aviation industry undeniably provide opportunities to mitigate chronic transport problems faced especially by landlocked countries such as Zambia (IATA, 2006).

Kamau (2015) stressed the need to have great flexibility in delivering air transport services. This is because airlines are often under unprecedented pressure to produce sustainable economic results while fuel, labour and asset costs and competition escalate against declining demand. New operating models require that new entrants embrace, creativity, innovation and use of technology to minimize the effects of intense competition. The future of airlines inevitably, depends on the ability to harness emerging technologies in order deliver superior customer experience and secure loyalty in addition to improving operational efficiencies. Kamau (2015) also emphasized the need for airlines to have great flexibility in adjusting to situations ranging from supply related issues to regulatory framework.

The IATA (2006) for instance, reported that the global airline industry had grown significantly consisting of over 2,000 carriers worldwide, operating more than 23,000 aircrafts and servicing over 3,700 airports globally. On average, airlines flew approximately twenty-eight (28) million scheduled flights carrying over two (2) billion passengers annually which makes it an arena of stiff competition (IATA, 2006). These figures have undoubtedly more than doubled by now.

With regard to Africa’s share of the global aviation industry, African Airlines Association (AFRAA, 2010) showed that the continent had only two percent share of the global air traffic flow which was attributed largely to inadequate airlines and over reliance on foreign airlines. During the period 2000 - 2012 about 65 percent of the air traffic operating to and from Africa were foreign carriers (AFRAA, 2010). The dominance of foreign airlines reflects African airlines’ capacity constraints. In 2006, Africa for instance, operated a total of 639 aircrafts, fewer than the total aircraft owned by one American or European Airline.

Despite Africa’s dismal share of this global industry however, there has been an above average growth over the past 10 years. According to AFRAA (2010), passenger traffic measured in revenue passenger kilometers rose 88.8 percent in 2003-2013 while air cargo demand measured in freight ton kilometers grew 54 percent.

Jet fuel price in some African countries including Zambia was double the global average and posed a threat to the survival of the aviation sector which also prevents fare reduction (AFRAA 2010). Apart from the issues of highly priced jet fuel, Africa's jet fuel shortfall was also expected to triple from 1.8 million metric tons in 2013 to about 5.2 million tons by 2025 (AFRAA, 2010).

At national level here in Zambia, it is evident that following the liberalization of the aviation industry in 1991, Zambia's local airlines performance has generally been poor, which has had a negative impact on the sustainable development particularly of the tourism sector. The survival rate of new entrants at both domestic and International levels declined. Competition led to a drop-in fare early in 2015, and carriers grappled with shrinking margins making it difficult for them to operate profitably (NACL, 2016). However, Boeing Forecast Report (2012) showed prospects of the African air industry in the coming decades, estimating, a robust international passenger annual growth rate of seven percent which was expected in the 2011 to 2031 period which is higher than the global average of 5 percent. This forecast was based on sustained Gross Domestic Product (GDP) growth, the rise of the African middle-class consumers and urbanization on the entire continent of Africa. If indeed this happens, one would expect a boost in sustainable development of the continent at large. To promote the realization of this optimistic outlook, Boeing Forecast Report (2012) further advised African countries to have functional and efficient regulatory regimes that would forester a productive aviation industry. A crosscutting challenge in Africa still remains the ability to sustain and expand the air travel growth on the one hand and overcoming challenges associated with high jet fuel prices and promoting sustainable development through improved transport and communication.

For many African countries including Zambia, an airline is not just an institution of air transport, but an essential symbol of sovereignty at almost the same level as the national flag, and national anthem and an important tool in the social economic development of the country. It is for this reason that most African countries either inherited or established national air carriers after independence from their colonial masters. For instance, after gaining independence from Great Britain in 1964, Zambia which did not inherit any airline of its own, immediately started working on establishing a National Airline. On 1st September, 1967 Zambia Airways Corporation Limited was launched to provide air transport services (cargo and passenger) both within and outside the country. This was after the dissolution of the Central African Airways which operated in Southern Rhodesia and Nyasaland (Personal comm.).

The Corporation became a subsidiary of the Zambia Industrial and Mining Corporation Limited (ZIMCO) from 1st January 1979 and a limited Company from 1st April, 1982. Subsequently the company started experiencing financial difficulties and so often government sustained its operations. As a result of regular financial constraints, on 24th November, 1988 government appointed a committee on parastatal bodies for the first session of the Sixth National Assembly. This committee suggested to have the national airline liquidated. In 1994 Zambia Airways was accordingly liquidated (Personal comm.).

Since the liquidation of Zambia Airways, the country remained without a National Airline and in its absence major airlines in the region took up the opportunity to take over the routes previously operated by the national carrier. Up until the end of 2017, regional and international airlines serviced regional and international routes, while the domestic routes were serviced by privately owned and locally registered airlines that have in most instances closed down after a period averaging ten years and new ones established.

This study therefore, was commissioned to examine factors influencing the poor performance of locally registered airlines as an important tool in the sustainable development of the tourism sector, trade and commerce and many other areas of the

Zambian economy. Areas of focus in the study were; i) routes operated by locally registered airlines, year of establishment and where applicable year of closure, ii) major operational costs, and iii) influence of policy framework on operations in general as well as the emergence of low-cost carriers. Such information would be useful in the process of reestablishing a new national air carrier expected to be launched in 2019.

MATERIALS AND METHODS

Study area location and description

The study focused mainly on Lusaka the capital and largest city of Zambia where all local airlines are registered. Livingstone and Ndola Airport which were recently upgraded were also visited for data collection and verification (Fig. 1).

Fig. 1 Location of study sites at Lusaka, Ndola and Livingstone, Zambia

Data Collection Methods

Data collection techniques involved an intensive literature review of the documentation relating to the aviation industry, air transport policies, their evolution and impact on airline operations, followed by several interviews with key personnel at the Ministry of Transport and Communications, Zambia Airports Corporation Limited, former Zambia Airways employees and owners of defunct and operational Airlines. Air transport records domiciled at the national archives were also examined.

Purposive sampling was used to select respondents for personal interviews that were deemed to have sufficient and relevant knowledge on airline operations. Only senior managers were targeted for personal interviews because this level of management yielded insightful and credible answers to the review questions.

A questionnaire survey was also carried out by distributing to 51 randomly selected employees of airlines, particularly among personnel of the defunct Zambia Airways, and the airlines registered in Zambia during the period 1967 – 2017 whether operational or closed down. All relevant data were extracted and recorded. At the end of the interview, the investigators went through the interview schedule to check for consistency, completeness, authenticity and detail.

RESEARCH FINDINGS

Locally registered airlines, years of operations and routes operated

During the period 1967 – 2017, a total of nine (9) airlines were registered in Zambia. The average number of years a locally registered airline operated in Zambia was nine (9) years. Of the total nine airlines, seven (78%) closed down and only two (22%) were still operational by March 2019 (Table 1; Fig. 2).

Table 1: Total number of all locally registered airlines, year of establishment and closure

No	**Name of airline**	**Year**		**Reason(s) for closure**	**Total years of operation(s)**
		Established	Closed		
1	Zambia Airways (National Carrier)	1967	1994	Change in economic policy which led to the liberalization of the economy. To some extent liquidity challenges led to the closure of National Airline	27
2	Proflight Zambia Limited	1991	Still operational		NA
3	Aero Zambia	1994	2000	On 19 January 2000 the Zambian Government closed Aero Zambia down due to safety concerns. The real reason was probably more to do with politics between the Aero Zambia management and the Zambian Government officials.	6
4	Zambian Express Airways	1995	1998	The airline was liquidated due to differences between its owners and the Movement for Multiparty government	3
5	Zambia Skyways	1999	2010	The Airline became insolvent and was finally liquidated 2010	11
6	Zambian Airways	1999	2009	The Airline faced Liquidity problems and was finally liquidated in 2009	10
7	Zambezi Airlines	2009	2012	On 1 November 2011, the airline’s licence to operate was suspended due to safety concerns. Subsequently, the airline was dismantled in 2012.	3
8	Royal Charters	2011	Still operational		NA
9	Mahogany Airline	2014	2014	The airline became insolvent and ceased operations in 2014	1
Average number of years of operations					9

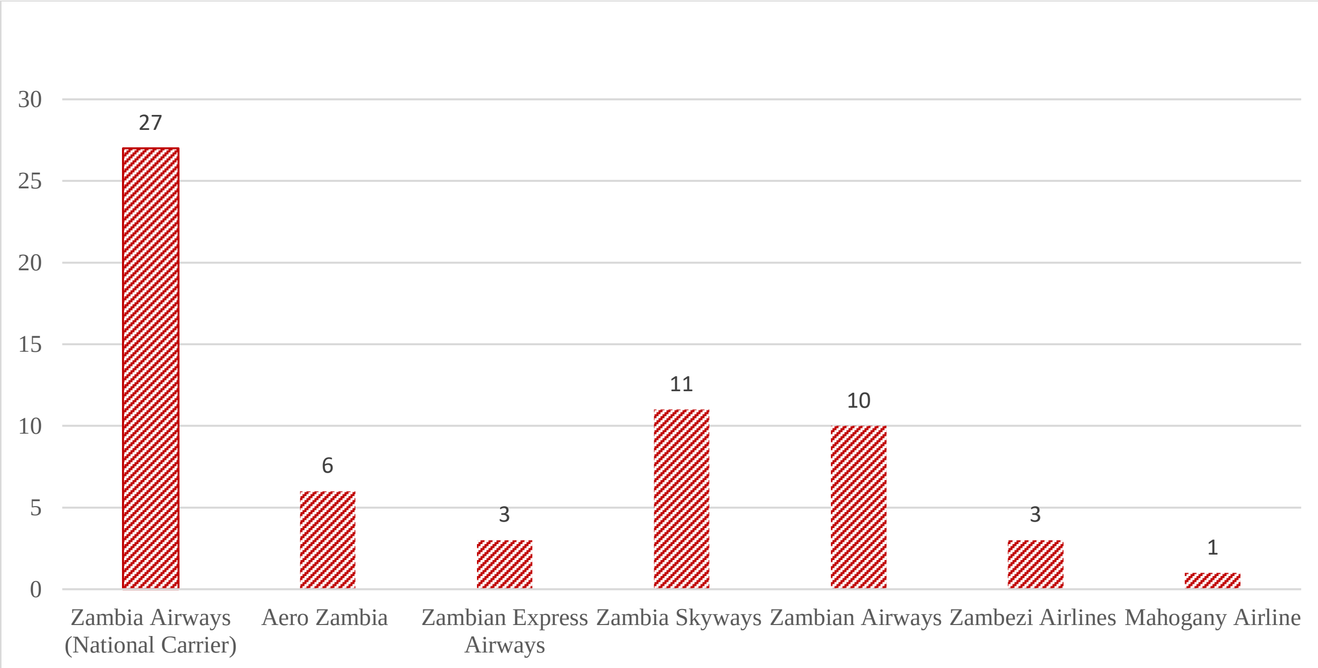

Fig. 2 Length of operations in years of airlines that were established and closed down between the period 1967 – 2014, Zambia

With regard to routes, Zambia Airways had the largest number of routes; domestic, regional, continental and intercontinental. The remaining ones were mainly domestic and to some extent regional (Table 2).

Table 2: Routes operated by locally registered airlines

No	Name of Airline	Routes		
		Domestic	**Regional (Name of International Airport)**	**Continental and Intercontinental**
1	Zambia Airways	Livingstone, Mfuwe, Chipata, Kasaba bay, Mansa, Kasama, Ndola, Kitwe, Solwezi, Mongu, Zambezi, Kalabo, occasionally Ngoma	Nairobi, Mauritius, Dar es Salaam, Blantyre, Francis town, Gaborone	London (UK), Rome (Italy), Nicosia (Cyprus), Frankfurt (Germany), Bombay (Mumbai - India), New York (USA); Monrovia (Liberia)
2	Proflight Zambia Limited	Livingstone, Mfuwe, Lower Zambezi, Ndola, Solwezi, Chipata, Mansa, Kasama, Mongu	Dar es salaam, Durban, Lilongwe	NA
3	Aero Zambia	Lusaka - Ndola	Johannesburg, Nairobi, Harare and Dar es Salaam	NA
4	Zambian Express Airways	Lusaka Ndola, Lusaka Livingstone	Lusaka Lubumbashi via Ndola Lusaka Johannesburg via Livingstone	NA
5	Zambia Skyways		Dubai and London through a partnership with Air Zimbabwe in which the airline was allowed to use Air Zimbabwe's Boeing 737 and Boeing 767 aircraft for the flights between Lusaka and London, Dubai, Lubumbashi and Harare.	NA
6	Zambian Airways	Chipata (Chipata Airport) Livingstone (Livingstone Airport) Lusaka (Lusaka International Airport) Hub Mfuwe (Mfuwe Airport) Ndola (Ndola Airport) Solwezi (Solwezi Airport)	Democratic Republic of the Congo Lubumbashi South Africa, Johannesburg (OR Tambo). Tanzania, Dar es Salaam, Julius Nyerere.	NA
7	Zambezi Airlines	Lusaka - Kenneth Kaunda Ndola - Ndola Airport.	South Africa Johannesburg - OR Tambo; Cape town. Tanzania, Dar es Salaam - Julius Nyerere. Kenya Nairobi - Jomo Kenyatta. Malawi, Lilongwe. Zimbabwe, Harare. DR Congo, Lubumbashi.	NA
8	Royal Charters	Solwezi – Lusaka		NA
9	Mahogany Airline	Lusaka – Ndola and Lusaka Livingstone		NA

At domestic level, all operators indicated Lusaka – Livingstone, Lusaka – Copperbelt and in the current decade Lusaka – Solwezi as being the busiest and most profitable routes.

With regard to the size of aircrafts and airports, it was evident that only Zambia Airways had large aircrafts for intercontinental routes including the trio engine DC10 with capacity to carry 250 – 345 passengers depending on sitting arrangements. Currently (by 2017) the Zambian registered aircrafts with the largest capacity of 29 seats was Proflight Zambia.

Major operational obstacles and costs

The most important cost was the high prices of jet fuel (84%) and the least was taxation (38%). The major obstacle was the competition from larger more efficient carriers from foreign countries (65%) (Table 3; Fig. 3).

Table 3: Ranked major operational costs and obstacles impacting locally registered airlines

Item	**Percent (%) score**	**Rank**	**Remarks**
Price of jet fuel	84	1	Most expensive in the region
Competition from large foreign air carriers	65	2	Most operated small aircrafts except Zambia Airways which had a DC 10 as its largest
Landing and maintenance costs; low visitor volumes	40	3	Of the 23 airports in Zambia (see Table 4), four could land international flights, and only eight are paved. Unpaved airfields could increase aircraft maintenance costs. Scheduled flights operating domestic routes have few passengers as most citizens prefer to travel by road. High cost of air tickets is the major complaint except for sponsored travelers such as government officials, chief executives of parastatals and corporations, employees of Non-Governmental Organizations (NGOs) and UN agencies.
Taxes and other statutory fees	38	4	

Notes: Each factor calculated out of 100.

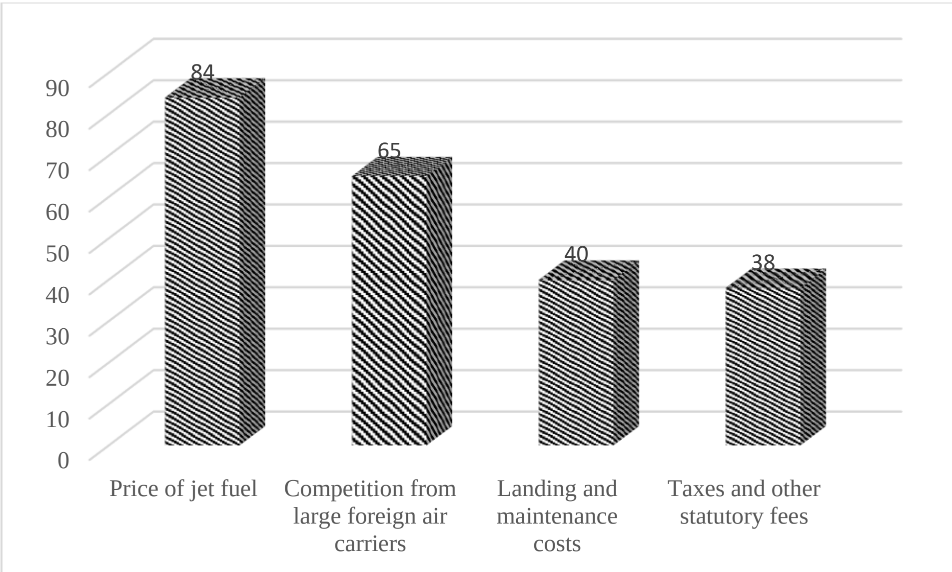

Fig.3 Percent score of operational costs and other obstacles of locally registered airlines, Zambia

Table 4: Airports in Zambia, 2017

No	Town	Province	ICAO Name	IATA Name	Airport Name
1	Chingola	Copperbelt	FLKE	CGJ	Kasompe
2	Chipata	Eastern	FLCP	CIP	Chipata
3	Kabwe	Central	FLKW	QKE	Milikeni
4	Kalabo	Western	FLKL	KLB	Kalabo
5	Kaoma	Western	FLKO	KMZ	Kaoma
6	Kasaba Bay	Northern	FLKY	ZKB	Kasaba Bay
7	Kasama	Northern	FLKS	KAA	Kasama
8	Kitwe	Copperbelt	FLSO	KIW	**S**outh Downs
9	Livingstone	Southern	FLHN	LVI	Harry Mwaanga Nkumbula
10	Luanshya	Copperbelt	FLLA		Luanshya
11	Lukulu	Western	FLLK	LXU	Lukulu
12	Lusaka	Lusaka	FLKK	LUN	Kenneth Kaunda
13	Lusaka	Lusaka	FLLC		Lusaka City
14	Mansa	Luapula	FLMA	MNS	Mansa
15	Mbala	Northern	FLBA	MMQ	Mbala
16	Mfuwe	Eastern	FLMF	MFU	Mfuwe
17	Mongu	Western	FLMG	MNR	Mongu
18	Ndola	Copperbelt	FLSK	NLA	Simon Mwansa Kapwepwe
19	Ngoma	Southern	FLNA	ZGM	Ngoma
20	Senanga	Western	FLSN	SXG	Senanga
21	Sesheke	Western	FLSS	SJQ	Sesheke
22	Solwezi	North Western	FLSW	SLI	**Solwezi**
23	Zambezi	North Western	FLZB	BBZ	Zambezi

Notes: In bold are commercial airports. (Raw data from: Civil Aviation Authority, 2017; NACL, 2016))

Regulatory framework

Regarding the legislative framework, the main ones were; Aviation Acts number 7 of 2012 which created the Civil Aviation Authority and the Aviation Act number 5 of 2016 which provides the legal environment for the operations of the aviation industry in Zambia. It was not immediately evident whether these pieces of legislation were comprehensive enough to support the growth of the local airline industry. The effect of the numerous aviation Acts on the operations of locally registered airlines was therefore, not immediately apparent. Anecdotal evidence however, suggested government interference in the operations of the defunct Zambia Airways. Examples given were among others the following; free travel (free pass) by some senior government officials and employees of the airline, political appointments in some positions of the Zambia Airways Corporation and others which could not be disclosed.

DISCUSSION

Factors Affecting the Operations of Airlines in General

Demirsoy (2012) identified five key factors affecting air transport as; economic, geographic and demographic, market structure, social factors, and maturity. He however, noted that economic factors were the most influential drivers in the operations of air transport. Gross Domestic Product (GDP), GDP per capita, income, expenditure, airfares and inflation were listed under the economic category. Geographic and demographic factors included population, size of the country and topography of land and level of urbanization. Regulated or deregulated markets and the business model of airlines can be mentioned as components of market structure. Social factors included psychological perception of the public about flying, education and immigration. Lastly, maturity was a key notion that determined the relation and magnitude of the relation between determinants and the air transport demand.

Economic Factors

The impact of air transportation on economic activity and as an important tool in the sustainable development of any economy is demonstrated in its distinctive characteristics of; speed, cost, flexibility, reliability and safety (Ishutkina and Hansman, 2008). Air transport is currently the only viable long-distance transportation means for high-value and perishable freights and time-sensitive individuals and is often the only mode of access for geographically isolated areas. On short haul distances however, Ishutkina and Hansman (2008) showed that air transportation offered little advantage over surface transportation modes, especially in places or countries with high-speed rail. At the macroeconomic level, however, air transportation impacts the economy by providing employment and enabling effects including access to; markets, people, capital, ideas and knowledge, labour supply, skills, opportunity, and resources all of which are critical elements in the sustainable development of an economy. The economy in turn, provides capital and generates demand for passenger and freight travel (Ishutkina and Hansman, 2008). With regard to the Zambian air travel landscape, it is evident that most domestic routes are within two hours flight, and the places which are relatively isolated do not have airfields. Additionally, ordinary citizens seem to prefer road travel, perhaps due to high cost of air tickets and this coupled with other factors may accentuate the low traffic volumes on domestic routes.

Demirsoy, (2012) again asserted that air transportation and sustainable development through heightened economic activity were interrelated and had reflexive effect on one another. The nation’s economic activities are somewhat stimulated by air transportation and the economic activity, in return, generate demand for air transport services. Air transport brings markets and people closer and if efficiently managed air transport could help achieve a significant economic growth (GDP) which propels sustainable economic development. Halpern and Brathen (2011) suggested that economic growth of a country can also have significant effects on air transport expansion. The development of the hard infrastructure for example, promotes export activities including tourism, enhances business operations and productivity and influence company location and investment decisions (Halpern and Brathen, 2011) which form the core of sustainable development.

Although empirical evidence on the relationship between air transport demand and economic growth is still limited, anecdotal information particularly those relating to Mexico suggested the existence of a linear relationship between Mexican air transport from the perspective of passengers' movement and economic growth. Demirsoy (2012) further analyzed the effect of air transport on the economic development represented by various sectors in Indonesia. Firstly, he examined sectors that had an effect on air transport and how air transport affected economic development. He showed that only tourism sector had a significant effect on air transport, while other sectors did not. Indonesia being a tourism-oriented country, this finding explains why it was the most important sector influencing air transport. He then concluded that the interaction between air transport and economic development was of a two-way mutual benefit relationship. This could be applicable to Zambia as well as most charted flights peaked during the tourism season. The current low visitor levels in the country could therefore, be an important factor negatively affecting the domestic operations.

On the side of disposable income as a function of GDP, it is evident that in Zambia, the failure for the airline to grow could be attributed to low GDP *per* capita income, disposable or discretionary incomes and consumer expenditure, because these factors determine whether people can afford to travel by air or not. In support of this assertion, Demirsory (2012) also showed that, beside the changing habits, discretionary income was the most important factor causing air traffic growth. He argued that when the individuals' incomes increase, they do not only raise the proportion of expenditures for transportation, but along with the income increase their budget for the transportation expenses automatically grows. Thus, the low incomes for the nationals left air transport a preserve of mainly non-Zambians. Despite air transportation becoming more desirable, the low incomes might have caused individuals not to shift from slower and cheaper means of transport to the faster ones like air travel (Ishutkina and Hansman, 2008). This could explain why some researchers have found a positive association between air transportation demand and income or GDP *per* capita growth. Demirsoy (2012) asserted that the disaggregate approach shows that lower income groups would have low participation in air travel, while middle income groups represent high growth, but higher income groups reflect the maturity in the air transport.

Demographic and Geographic Factors

Ishutkina and Hansman, (2008) showed that demographic factors were the second most widely mentioned group of factors influencing air transport demand after economic factors. As the population increases it continues to stimulate part of the growth in the air passenger demand by increasing the number of passengers. This is supported by the fact that passenger demand and the location of airport facilities are shown to be heavily influenced by the location of population and economic activities. As a consequence, air transportation demand concentrates on densely populated and urbanized areas. Urban areas have the most crucial factors affecting the operations of air transport. Geographic factors such as location, size and distances also play a pivotal role in determining air transportation demand (Ishutkina and Hansman, 2008). With regard to Zambia, it is evident that the most densely populated areas are Lusaka and Copperbelt which are about 400km apart and are also serviced by the efficient road transport, and this combined with low incomes disadvantages air transport on domestic routes. One would argue though that since Zambia has many National Parks (20 in total) distributed across the country, these could act as pull factors for the urban population. This sounds logical from the business sense, but it is not the case with Zambia, where most of the National Parks lack infrastructure, are poorly funded and animal numbers are low due to high levels of poaching. This makes them unattractive leaving only two places, the Luangwa and Mosi oa Tunya as being the most popular.

Social Factors

Social factors are generally very hard to quantify, but psychological, environmental (from a social perspective), immigration issues and changing lifestyles (habits) are generally considered to be part of social factors. For example, people particularly in the developed countries are taking longer and more holidays than before and every holiday is an additional journey.

It is also a known fact that travel habits or patterns have changed as young people who have grown up in an environment of safe and reliable air travel regard flying as a normal means of extending their social and educational horizons. Many young people in addition to holidays also travel on educational tours and business. This demonstrates that social factors can play a pivotal role in the demand for air transportation by increasing desire for traveling. Leisure air transport market therefore, has experienced growth as a direct benefit of social factors. For example, the growing desire to travel, increasing international education and changing family structure are increasing travel needs of individuals. The increasing numbers of citizens in the diaspora has inspired family members in the countries of origin to travel and meet relatives and migrants also tend to travel in order to see their hometown, friends and relatives few times a year. Additionally, the increasing levels of academic attainment of the majority of people has also contributed to the increased desire to explore new lands and culture. So, as the level of education increases in society the propensity to fly also increases.

In addition to these factors, considerable part of the citizens of urban settlement comes from different locations. This means there is migration from rural to urban areas. In emerging countries there is a strong flow of migration from rural to urban areas; people try to find a better job, to move to areas with higher standard of living. These people usually leave a lot of relatives and friends behind. As a result of this, one can expect that migration plays a considerable role in determining air travel demand. However, in Africa and Zambia in particular, all domestic and some regional movements are mainly by road, mainly due to low income among the workforce. This disadvantages domestic airlines, as most international travelers prefer larger and more established airlines.

Major operational obstacles and costs

Paelo and Vilakazi, (2016) argued that many local airlines do not cope with increased fuel costs because fuel is the primary driver of costs for an airline. They attributed failure of airlines to aircraft fuel efficiency and the fuel price. Airlines in Africa on average make a margin of about 2% (Paelo and Vilakazi, 2016). The biggest chunk of revenue received is spent on operational costs. As pointed out earlier, fuel generally covers the biggest proportion of costs. Additionally, fuel is an even greater challenge because the domestic operators do not often fly over long distances to derive full efficiencies while big carrier aircrafts usually utilize economies of distance. For a typical passenger plane used in the domestic market to be used efficiently, it requires a 10-12 hour utilization *per* day (Paelo and Vilakazi, 2016) which is not possible for Zambia where the longest direct route may not exceed three (3) hours. Due to closure times at airports as well as the short distances between destinations, LCCs do not fly long enough distances and duration to benefit from the potential efficiencies derived from flying longer distances. Added to the challenge of fuel costs is that the Zambian local market is less capable of absorbing the higher fares which local airlines may put due to competition with international air carriers.

Competitive dynamics, entry and exit in the airline industry

According to Paelo and Vilakazi, (2016) the airline industry is prone to certain abuses of dominance or other forms of anticompetitive conduct (including cases related to state-aid in the European Union). Regulation sometimes favours incumbent (national) operators rather than entrants, dynamic rivalry and gains to consumers (Paelo and Vilakazi, 2016). Several examples can be cited internationally of legacy carriers enjoying regulatory protection and aid from the state in the name of national interest and sovereignty, or of formerly protected flagship carriers involving themselves in anticompetitive behaviour which seeks to undermine the ability of rivals to compete, or raises their costs, both at the expense of consumer welfare (Paelo and Vilakazi, 2016). On the side of the defunct Zambia Airways, it is not very clear to what extent and as to how much the state might have put into the airline to sustain its operations. Even if it were so, there were no privately-owned airlines at the time which could have been disadvantaged by this practice.

Globally though, such incidences and cases of monopolistic predation have been brought against several large airlines, with the most commonly referred to being the case of United States *versus* AMR Corporation and Others, (Case No. 99-1180-JTM) brought by the US Department of Justice against American Airlines. American Airlines was alleged to have engaged in predatory conduct with respect to seven core routes and seeking to monopolize other routes by developing a reputation for predatory conduct. Essentially, American Airlines responded to entrant LCCs by aggressively matching prices and increasing capacity on those routes with a view to encourage exit and recoup losses following exit of the entrant. The case was eventually dismissed due to failure on the part of the Department of Justice to prove that American Airlines priced below marginal cost, which was a key requirement for proving a case of predation. This case though, succeeded in showing the impact of strategic conduct by dominant incumbents on the industry (Paelo and Vilakazi, 2016).

In the SADC region, South Africa has had several competition law cases against firms in the airlines industry. Most notably, South African Airways (SAA) has been involved in the majority of cases and penalized repeatedly by the competition authorities, in some cases for repeat violations of the same provisions of the Competition Act (Paelo and Vilakazi, 2016). Paelo and Vilakazi, (2016) cited the case where Nationwide Pty (Ltd) filed a complaint against SAA regarding two incentive schemes entered into between SAA and travel agents that amounted to an inducement not to deal, and predatory pricing. The first of the two schemes were an override incentive scheme that involved offering travel agents further commission over and above their basic commission if they exceeded a target figure as stipulated in a contract in terms of sales of SAA tickets. It was payable on the total of sales achieved above and below the target. Agents were also offered ‘incremental commission’ whereby they would qualify if they achieved a certain percentage of sales above the target. The Competition Tribunal found SAA to have contravened section 8(d)(i) of the Competition Act which prohibits a firm from requiring or inducing a supplier or customer to not deal with a competitor through its incentive schemes. It imposed an administrative penalty of R45 million on SAA. As in the American Airlines matter, the Commission had found little evidence to support a predatory pricing charge which formed part of the complaint. Again, it is evident that such practices did not occur during the operations of Zambia Airways as it was the sole carrier. With the planned reestablishment of a new national carrier, it will be necessary to take note of the experiences of other national airlines.

In underscoring the need to consider ethics and etiquets governing competition, Paelo and Vilakazi, (2016) asserted that exclusionary abuses are harmful not only because of the effect they have on rivals in the short term, including through forcing their exit from the market, but the long-term losses in welfare suffered to the economy from the exclusion of potential effective rivals from markets with subsequent losses in consumer welfare. Whether unfair competition was and still is one of the major factors which could make Zambian registered airlines fail to compete in the domestic, regional and international routes and hence be forced to exit the market is not yet not fully understood. Based on general knowledge however, it is assumed that competition played a part in the closure of most of the Zambian registered airlines.

Taxes

Taxes form a substantial portion of an airline's expenses and locally registered airlines though small and most of them still in their infancy operate at the same airports as the other well established regional and international full-service carrier (FSC) airlines and pay the same airport taxes and fees. There is currently no provision to support the locally registered and small carrier airlines, largely due to a principle of non-discrimination. Since the locally registered airlines are small and may charge much less than the well-established regional and international FSCs, taxes may undoubtedly disadvantage them since they often make up a larger portion of their operating costs. The taxes paid by airlines including passenger taxes and air traffic and navigation services (ATNS) fees which are non-negotiable and so even the fledgling domestic airlines are compelled to pay. Again, it is not yet conclusive as to what extent the payment of taxes and airport fees such as landing and departure fees could have influenced the operations of locally registered airlines and forced most of them into closure.

Regulatory framework

Registering and operating an airline in in Zambia is similar in several respects to the process followed in other countries. Although domestic regulation applies largely in so far as countries have sovereign rights over their airspace, the industry is governed by several important international agreements for the purposes of standardizing aspects of safety and cooperation. Therefore, regulation appears to be an important aspect for an airline. Major components of the regulatory framework target the following and does not depart from the common practice in the region; i) control, regulation and orderly development of civil aviation in Zambia, ii) granting permits for air services and airport services, iii) implementation of a State Safety, iii) compliance with Annex 19 to the Chicago Convention, iv) establishment of an independent Aircraft Accident Investigation Board in compliance with Annex 13 of the Chicago Convention, v)security for civil aviation and a National Aviation Security Programme which is in compliance with Annex 17 to the Chicago Convention, vi) air services, airport services and air navigation services in compliance with Annex 14 to the Chicago Convention, vii) transportation of dangerous goods by air in compliance with Annex 18 to the Chicago Convention, viii) safe, secure and efficient use of civil aviation; to give effect to the International Convention on Civil Aviation signed in Chicago on 7th of December, 1944 and all international agreements on civil aviation to which Zambia has acceded and is a State Party, ix) consolidation of the various laws on aviation and the repeal of the Aviation Act, 1995, Safety of Civil Aviation Act, 1989, Air Services Act, 1964, and Tokyo Convention Act, 1971, and x) the functions of the Zambia Airports Corporation Limited and the renaming of designated airports. On this restricted part, the regulatory framework seems to have been facilitative to the industry as the provisions are merely in compliance with the international common practices.

CONCLUSION AND RECOMMENDATIONS

It is very apparent from the results and discussion presented so far, that air transport plays a very significant role in the sustainable development of any country. It is also clear from the Zambia landscape that high operational costs particularly fuel costs, emergency of low-cost carriers and increase in more efficient foreign airlines, unprofitable routes, low passenger numbers may have influenced the poor performance of locally registered airlines. For the defunct Zambia Airways, undisclosed government interference could have been an additional factor. There are still other factors that require further investigation to have a comprehensive conclusion on this matter. For now, it still remains speculative at least on the role of government and the regulatory framework and how these can positively or negatively influence operations of airlines. One would assume, based on comparative evidence that the regulatory framework and the role of government are critical in supporting the operations of locally registered airlines. It can therefore be concluded that if the regulatory frame work does not facilitate the development of the sector coupled with government interference, air transport would be negatively affected. The Ethiopian Airlines for instance, is almost 100 % government owned and has been in operation since 1945 and based on current conditions a very successful airline. It therefore leaves no doubt that the role of government and the regulatory framework are key but by no means the only factor in the success or failure of particularly the national carrier. The type of aircrafts owned by locally registered airlines have been small and cost inefficient to operate. Over reliance on short domestic routes averaging two hours flight making airlines fail to utilize economies of distance is another factor worth exploring. For a typical passenger plane used in the domestic market to be used efficiently, it requires a 10-12-hour utilization *per* day as earlier reported by Paelo and Vilakazi (2016).

With regard to policy and legislative frame works, it is appreciated that significant strides have been achieved in this area; i) recently Zambia passed the aviation Acts number 7 of 2012 which created the Civil Aviation Authority and the Aviation Act number 5 of 2016 to provide sufficient legal environment for the operations of the aviation industry in Zambia, ii) the current regulation meets the ICAO safety and security standard, and according to the Zambia Civil Aviation Authority the country has legislation on Air Services Licensing and International Air Services which provide for the establishment of Councils that are responsible for the licensing, regulation and control of domestic and international air services, iii) the Carriage by Air Act provides effect to the unification of certain rules relating to international carriage by air and their application subject to exceptions, adaptations and modifications, iv) the Civil Aviation Act established the Zambia Civil Aviation Authority which now deals with safety and security oversight functions of the aircraft, airports and related matters, v) the provisions of the various pieces of legislature also deal with roles and rights in terms of airport slot management, licenses and permits, and vi) the country has domesticated most international conventions on aviation such as the Chicago convention Act 1944 and the Tokyo Convention Act, 1971.

It can without doubt therefore, be categorically stated here that air transport is very critical in the sustainable development of any country. This could perhaps be one of the major reasons why the Zambian government has decided to re-establish a national airline 25 years after Zambia Airways, a National Carrier was liquidated. It is expected that the re-establishment of a national carrier will restore and reinvigorate socio-economic benefits associated with airline operations including multiplier effects such as food catering services, aircraft cleaning services, fuelling services, travel agencies, hotels, car rentals, and other businesses in the travel and tourism industry and ultimately acting as a motivating force in sustainable development.

RECOMMENDATIONS

African aviation industry must be poised to accommodate the growth in passenger and cargo traffic with better strategies to mitigate the risks and impact associated with jet fuel costs.

Based on this collective aviation vision for Africa and the national aviation needs, the following recommendations were made-

i. Commission a thorough study to collect detailed data on airline operations which prospective operators can use to study the industry before venturing into the air transport sector;
ii. Encourage operators to purchase or lease fuel efficient aircrafts since jet fuel costs are high in Zambia;
iii. Lobby government to formulate a deliberate policy framework that provides incentives to locally operated airlines so that they can compete with foreign registered airlines;
iv. Promote of tourism both locally and internationally as this encourages the movements of people;
v. Invest in tourism infrastructure, facilities and services such as the development and improvement of National Heritage Sites and National Parks so as to enhance the number of domestic and international visitors which according to Chomba and Sianjobo (2014) are still low when compared with other countries in the eastern and southern regions with comparable potential;
vi. Develop tourist circuits to disperse visitors across the country and promote the use of air transport;
vii. Grow the economy which would ultimately improve GDP *per capita* there-by enhancing disposable incomes and ultimately creating demand for holidays and the need to use air transport;
viii. Where possible and when the national carrier is reestablished, minimize government interference, so that the institution can operate based on business principles; and
ix. Improve the quality of airfields in the country (see Table 4).

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