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Causes of Airline Failure: A Study of Defunct African Airlines

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Abstract

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The African aviation industry is projected to grow rapidly in terms of passenger growth. As a result, airlines who are the major stakeholders in the industry need to be prepared to accommodate and benefit from this growth. The only way airlines can accommodate and benefit from the growth is if they are still existing and thriving.

The aim of the thesis is to find out the major cause(s) of African airline failures and what existing and future African airlines can learn from it. This is based on the logic that a clear understanding of the causes of a problem is necessary for the remediation of such a problem. The aim of the thesis is achieved by synoptically analysing African airlines that have ceased operations to find out the primary reason for closure and creating a questionnaire to get the opinion of aviation workers and experts in Africa.

A total of 31 defunct African airlines were studied in-depth through archival document analysis, while the views and perspectives of 32 aviation workers were obtained through a semi-structured questionnaire. While the former data set was analysed through meaning-making, the latter was analysed using frequency count and percentages. The findings show that the major causes of airline atrophy in Africa are different forms mismanagement, including fraud, and government unfavourable policies and indirect interference. The pattern of atrophy shows that the mortality rate is high in the first five years, and that airlines that survive that crucial period tends to development some form of resilience that keeps them going. A combination of creative and disciplined management, favourable government policies, a robust source of capital would help reduce the rate of atrophy of African airlines.

Key words

Aviation, African airlines, Airlines' failure, airline atrophy, airline internal factors, airline external factors

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1 Introduction

A quick perusal of the International Air Transport Association's (IATAa 2019) monthly air passenger market analysis shows that African airlines have the lowest passenger share in the world. For instance, in January 2019, African airlines had a passenger share of 2.1% which reflects African airlines' position in the world's aviation market. Although Africa's population is 17% of the world's population (Worldometer 2022). African airlines have the lowest passenger share due to numerous reasons. Among the reasons is that some 80% of intercontinental traffic between Africa and the rest of the world is operated by non-African airlines (Chingosho & Mombasa 2013). That report was in 2013 but there is no evidence to show that things have changed as African airlines still have the lowest market share. Coupled with this is the fact that out of the top 10 profitable intra-African routes, only two are operated by African airlines (Pinto 2020).

According to International Civil Aviation Organization (ICAO), the African aviation market has the highest potential for growth out of all global regions due to a large and increasing population. Unfortunately, this potential has not yet fully materialized into a strong and uniform air traffic growth within the continent. The growth in Africa's aviation industry is in contrast with the rapid growth in the demand for air transport which is estimated to increase by an average of 4.3% per annum over the next 20 years (ICAO 2019) and Africa's passenger growth will average 4.4% over the next twenty years (IATA, 2018). In 2037, Africa will grow by a Compound Annual Growth Rate (CAGR) of 4.6% and will see an extra 199 million passengers for a total market of 334 million passengers. This would make Africa have the second highest CAGR in the world by 2037 (IATAa 2019). With this impressive forecast, it becomes necessary to direct research attention on African airlines with a view to understanding their resilience, performance and/or preparedness.

As of 2019, nineteen African states do not offer international commercial air transport services. While twenty-two states offer commercial services, only four of these offer more than three international commercial air transport services (ICAO 2019). To prepare the aviation industry for current operations and future estimated growth, a lot of initiatives and projects have been initiated, even completed to improve Africa's aviation. These included the Yammousskruo 1999, African Continental Free Trade Area (ACFTA), and The Single African Air Transport Market (SAATM). Notably, these initiatives have yielded some positive results (InterVISTAS 2014).

Perhaps the predicted growth and airspace liberalisations are major factors in the rise of new entrants in the African market. Seven airlines started operations in Africa from 2020 to 2021 and many more have joined since then (CAPAb 2021a). While this is a develop-

ment to be celebrated, it is also a development to be cautious of. This is because according to the CH-Aviation database, there are currently over 640 African and middle eastern airlines that have “Out of Business” status. This is sadly the reality, and one must wonder if there is a pattern to the rise and fall of African airlines, especially recently. As major African and foreign airlines get ready for the predicted growth expected in the aviation industry, smaller African airlines and new entrants need to ensure that they do not collapse and are ready in time for growth.

1.1 Thesis research question and objectives

The reason history is studied is to learn from it and that is the aim and objective of this thesis. As detailed earlier, Africa is a rapidly growing continent and the demand for air travel is set to increase by 4.3% per annum over the next 20 years. As a result, airlines would see an extra 199 million passengers by the year 2037, and the aviation industry in Africa must be ready for such growth (ICAOa, 2019; IATAa, 2019). While this is good news, unfortunately, the problem is that a lot of African airlines (over 169 according to the Ch-Aviation database) have shut down over the past twenty years. Should this trend continue, the industry would not be ready for this expected growth. One way Africa’s aviation industry can be ready for the expected growth is to make sure that existing and new airlines regardless of their age, operation size and business model are still standing strong in years to come. By looking at the history of African airlines that have shut down over the past few years and finding the root cause of their closure, this research can arrive at findings and conclusions about their closure. Such findings with their implications for preventing airline mortality would be a great learning point for existing and future airlines.

This thesis hopes to contribute to our understanding of the causes of the high mortality rate of African airlines by focusing on the major cause(s) of the fall of the airlines. It presents a case study of carefully selected rested African airlines that have existed within the past 25 years with a focus on the cause(s) of their collapse. To do this, case-by-case analysis was carried on and the outcomes curated into a survey applied among aviation experts and workers. The thesis aims to find out what are the major cause(s) that led to the collapse of previous African airlines and how existing and future African airlines can learn from it. This is based on the logic that a clear understanding of the patterns of a problem is necessary for the remediation of such a problem.

The research questions driving this study are listed here:

- What is the cause of the fall of previously existing African airlines?
- What is the pattern of airline atrophy or collapse in African airlines?
- What can present and future African airlines learn from the collapse of other African airlines?

1.2 Thesis Structure

This thesis follows a thought-out orderly structure with the following chapters mentioned chronologically: Introduction, Literature Review, Research Method, Data Collection, Results and Discussion. The introduction offers a brief but detailed description of the background, objectives, importance, and research plan of the thesis. The literature review presents the previous research work done on the themes in this thesis. It covers key areas such as background research of the thesis question, the current state of the aviation industry in Africa, airline start-ups, aviation regulatory bodies and among others.

The research method section gives extensive research on the different research methods available with a focus on qualitative research, quantitative and the case-study approaches which is the research method used in this thesis. The section would also explain the different data collection methods (including document analysis method) which were used to analyse the root cause of the collapse of the airlines.

The Data collection section presents the primary and secondary data needed for the analysis of the research questions. The first data to be presented would be the secondary data which came from the analysis of the airlines while the second data is the primary data which came out of the surveys conducted among aviation experts and workers. The result chapter analyses the primary and secondary data collected to answer the thesis questions while the discussion chapter gives a summary of the result, conclusions, evaluations of the thesis and proposals for further research.

This thesis follows the reporting guidelines of Haaga-Helia and employs some tools such as Mendeley, Webropol, Datawrapper and Grammarly to improve its quality.

2 Aviation Industry

The global aviation industry is a fast-growing multibillion industry that umbrellas other industries such as aircraft, airline, and airports. This chapter presents a literature review on the general global industry, liberalisation and development of African civil aviation, current state of the African aviation industry, and challenges in the African aviation industry.

2.1 General Global Industry

The global aviation industry has played a major role in the creation and development of the present global economy by directly or indirectly providing aviation related services to every country in the world (Belobaba 2016). According to the Air Transport Action Group (ATAG)'s 2020 report, about 4.5 billion passengers were carried in 2019 by the world's airlines, and about 87.7 million jobs were supported by in aviation and tourism before the Covid-19 outbreak. Currently, around 1,478 airlines operate a fleet of 33,299 commercial aircraft, serving 3,780 airports through a route network of several million kms managed by 162 air navigation service providers.

All these operations translate into economic development, aviation contributed $961.3 billion to the global gross domestic product (GDP) of the global economy, equivalent to 1.1% of global GDP. The aviation industry also dominates the means of transportation for tourists. For instance, in 2018, 58% of tourist travelled by air to their destination (Figure 1). The aviation industry is just starting as aviation experts predict that by 2038, aviation will directly contribute $1.7 trillion to the world's GDP (ATAG 2022).

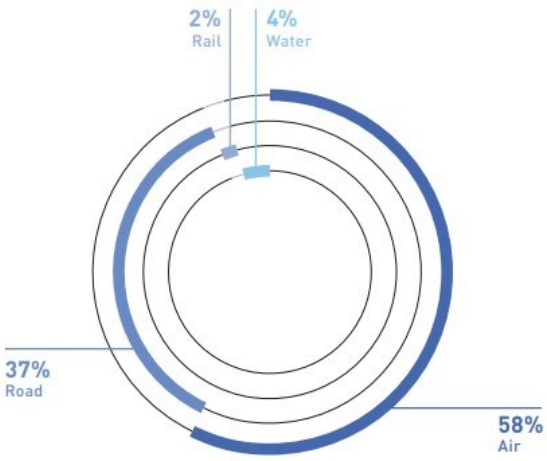

Figure 1. Global tourist mode of transportation. (Source: ATAG 2022)

2.2 Liberalisation and Development of African Civil Aviation

The two major events in the development of African civil aviation history occurred in 1961 and 1988 when the Treaty on Air Transport in Africa (also known as the Yaoundé Treaty) and the Yamoussoukro Declaration (YD) were signed respectively (Abeyratne 1998). The objective of the YD is defined under Article 2, as the gradual liberalisation of scheduled and non-scheduled intra-African air transport services. A total of 44 out of 54 African states signed the declaration (Gleeve 2014). The adoption of the YD as a framework of liberalization helped to bring in a new and better environment for African airlines by allowing free access of air traffic between member states to help create a single African aviation market (Amankwah-Amoah & Debrah 2011). So far, the aviation industry in Africa has tremendously grown as a result of the benefits from the YD (InterVISTAS 2014). One of such growth is Africa's codeshare-induced one stop global connectivity index which was 2.9% in 1993 and increased steadily to 34.8% in 2012 (Allroggen, Wittman & Malina 2015)

Although growth has been recorded, the 10 African member states that did not sign the treaty combined with the zero or low implementation of other African states has led the African aviation industry especially African airlines to miss out on an historic opportunity (Schlumberger, 2010). The YD implementation meant signed countries were closed parties and countries that did not sign were not considered parties. This shows that, even if the YD were fully implemented, its provisions do not really constitute an Open Skies arrangement for Africa. Open skies in Africa rely heavily on governmental involvement and enthusiasm to foster freedom of access for eligible airlines. Unfortunately, such enthusiasm is often absent (Gleeve 2014). The partial success of the YD implementation has helped shaped the current environment for African aviation especially African airlines.

2.3 Current state of the African Aviation industry

There is consensus that the future of aviation in Africa has significant economic potential because of its great attributes such as vast land mass, growing population, young workforce, fastest growing middle class, extractive resources, high number of landlocked countries (16 out of 54) which are yet to be fully tapped by commercial aviation, and growing tourism sector (Njoroge & Samunderu 2020; Meichsner, O'Connell & Warnock-Smith 2018). Although, Africa's aviation industry has not reached its full potential, it is doing well: airlines, airport operators, retailers and other on-site businesses at airports and air navigation service providers and civil aircraft manufacturers contribute directly to GDP in Africa. In 2018, the operations of these businesses directly generated a $9 billion contribution to GDP, about the size of the entire GDP of Rwanda. The industry also directly supported 440,000 jobs pre-Covid and 267,000 post Covid, and indirectly supported 7.7 million jobs

pre-Covid and 3.2 million jobs post-Covid. With African airlines carrying around 95.6 million passengers in 2019 with a load factor of 73%, aviation experts predict average annual growth for Africa would be 3.4% over the next decade (ATAG 2020).

As shown above air transport in Africa is a rapidly growing sector, however, the growth, does not provide a complete perspective of its health (Bofinger 2017). For example, African aviation industry have the lowest load factors, passenger traffic and support the lowest number of jobs when compared to other regions (Figure 2). To put it into perspective, Africa welcomed about 115 million passengers in 2019 which is really low when compared to the 127.3 million passengers that flew into Germany the same year (ATAG).

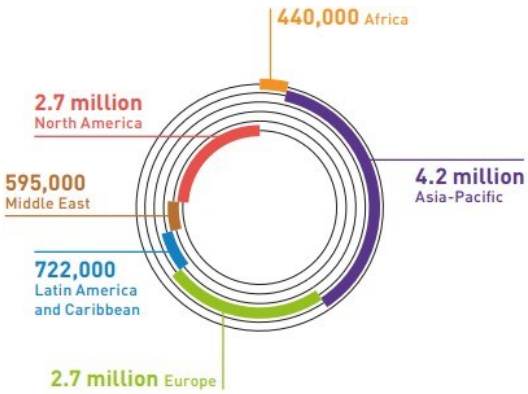

Figure 2. Direct employment by the aviation industry. Source:(ATAG 2020)

Another aspect of Africa's aviation industry that is of concern is the number of flights coming in and out of the continent. This number is low when compared to other continents as shown in the figures below.

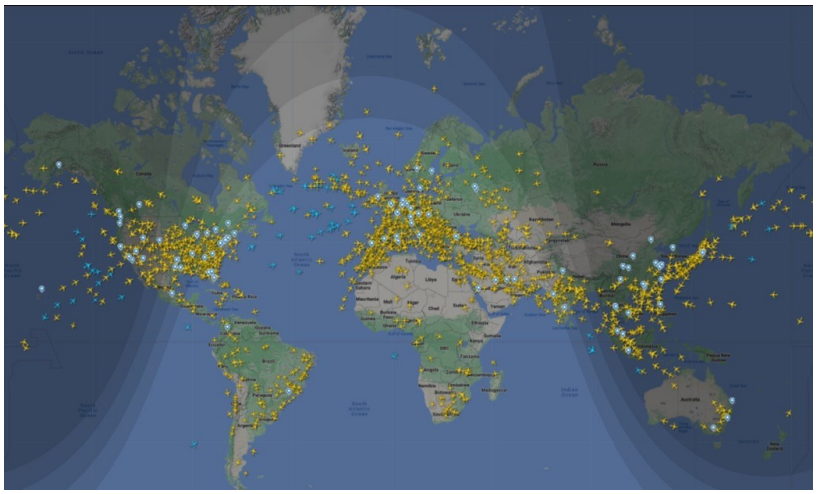

Figure 3. Aircraft position over the world taken on 22 November 2022, 14:28. (Source:(Flightradar 2022))

Figure 4. Aircraft position over Africa taken on 22 November 2022, 14:30. (Source: Flightradar 2022)

The global aircraft position over the world from (flight radar) (Figure 3) reveals how weak the aviation industry in Africa is, with aircraft concentration primarily in Europe, North America and Asia, and narrowing down aircraft position within Africa (Figure 4), shows major concentration in south and north Africa. Africa also only contributes about 2-4% of the global passenger air service market and less than 1 percent of the cargo market (Njoroge & Samunderu 2020).

Africa has maintained a decline in the accident rate in jet and turboprops operations (IATA 2022). Although airlines based in sub-Saharan Africa experienced four accidents in 2021, all with turboprop aircraft, three of which resulted in 18 fatalities (Bofinger 2017), however, there were no jet hull loss accidents in 2020 or 2021 in the whole of Africa (IATA 2022).

Currently, Africa has 352 functional commercial airports, 36 air navigation service providers, 1.2 million yearly flights pre-Covid, 198 airlines operating with 1700 current fleet within the continent. There are about 257 aircraft order from African airlines with Ethiopian having the highest order. Ethiopian airways is the market leader in Africa with about 9% of total seat capacity. Emirates, British Airways, Saudia, Air France, and Turkish Airlines are the top five large foreign airlines in Africa in terms of seat-share. Royal Air Maroc made history in 2020 as the first full African member of the oneworld alliance (Bofinger 2017; ATAG 2022; Oneworld 2020).

Several new airlines are set to enter the African, and some are in the start-up phase such as Green Africa which is a Nigerian low-cost carrier operating the ATR 72-600. FlywestAf, is a Gambia start-up, and Pan-African airline, which is a proposed partnership between South African airways and Kenya airways is yet to take off (CAPAb 2021b; Lim Jean 2022). More African airlines are getting ready to launch afresh or relaunch and in order to stay afloat, but there are a lot of challenges to overcome.

2.4 African Aviation Industry Challenges

Despite Africa having the right ingredients for a blossoming aviation industry, the industry right now is far from blossoming. As described in the previous chapter, the continent is yet to harness its potentials. Africa's failure to implement and liberalize its intra-regional market is a major reason for its stunted growth in the aviation industry (Njoroge & Samunderu 2020). In a 2022 study by (Leitch & Chigada 2022), liberalisation was ranked first in the top 7 challenges ranked by importance and urgency combined, this is not a surprise as(Njoroge & Samunderu 2020) mentions that most African countries rely on restrictive bilateral service agreements and open skies policy which presents a barrier to air transport in Africa. This challenge has also been echoed by stakeholders (such as senior officers at Arik Air, Kenya Airways), who citied that liberalised markets such as Europe has better ticket fares when compared to Africa which shows the effect liberalisation has on a continent (Gleeve 2014). The effects of restrictive liberalisations go beyond affecting just airlines as seen in many cases, the lack of active implementation and political support for liberalisations remains the single largest threat to Africa's aviation development(Njoroge & Samunderu 2020).

While lack of liberalisation is considered heavily as a major challenge in the industry, Bofinger (2017) argues that the new and bigger challenge for African aviation development is about affordability and rise of airport charges rather than liberalization. Passengers can hardly afford ticket fee as new investments in airports relate to higher airport charges which lead to higher ticket fees. Bofinger is not alone on this view, as (Gleeve 2014)and (Njoroge & Samunderu 2020) also mentions high fares as a challenge and attributes some of the reasons for high fares to high user charges, high taxes, high operational costs, and international competition. This is bad as high fares tend to lead to lower passenger demand which is huge problem for airlines (Gleeve 2014).

Lack of quality Infrastructure is also seen as a challenge facing Africa's air transport industry (Meichsner & al. 2018), this is not a uniform problem as some African countries tend to have better infrastructure than other countries which poses bigger challenges for airlines flying in the different countries. Major hubs in North, East, and South of Africa

such as Cairo, Addis Ababa, and Johannesburg provide better infrastructures compared to their western counterparts (Gleeve 2014) which tend to have very old and worn-out structures (Button, Martini & Scotti 2017). There's always a lot of buzz about new aviation infrastructure by many African countries (such as the proposed Lekki-Epe airport Lagos terminal in Nigeria, proposed Bishoftu Airport in Ethiopia which is to be the largest airport in Africa) but most times these structures are expensive investments that overpredict passenger demand and/or do not recognize the key functions of an airports (Taiwo Efosa 2022; Bofinger 2017).

Another major challenge is finance in the form of under-capitalization of African airlines which when combined with inexperienced and insufficient management often plunge airlines into debts, and this was the case of South Africa and Kenya's largest airlines (Njoroge & Samunderu 2020). Apart from bad management, airlines in Africa often have hard times accessing long term financial assistance from banking systems due to the structure of most African banking systems, the rare times financial institutions are willing to invest in African airlines often come with very high rates (Gleeve 2014).

Other challenges facing Africa's aviation industry include aviation safety, non-sustainable business models for airlines, foreign competition, hectic regulatory frameworks, bad management, brain drain, unskilled labour force, poor safety record, (Bofinger 2017; Leitch & al. 2022; Meichsner & al. 2018). The aviation environment is far from being homogenous, and challenges would always arise, and this calls for having a set of strategies that can respond to specific challenges (Heinz & O'Connell 2013).

3 Airline Industry

The previous chapter gives detailed description of the aviation industry globally and in Africa. This chapter goes further into the literature review about airline global development, airline business models, African airline history and development, airline start-up and failures, usual patterns of failures, and aviation regulatory bodies and associations in Africa.

3.1 Airlines Overview and development

Aircraft flying at its initial stage was often expensive and dangerous which resulted in national governments legally regulating airline operations to ensure maximum safety which often required expensive regulations and practices that expanded government's involvement such as sometimes having state ownership of airlines (Ison & Budd 2020). Consequently, no other field of human endeavour is as harmonised as the international aviation regulatory system (Bartsch & Trimby 2020). Since its inception, aviation has been subject

to strict legal and regulatory control, with the first aviation regulation going back to 1784, (the year after the first manned balloon flight). However, the first notable aviation convention to set the stage for international civil aviation development was the 1944 Chicago convention (Bartsch 2022; Njoroge & Samunderu 2020). In the 1970s, there was a move towards deregulations as only few airlines were allowed to operate with restrictive freedom which kept prices at an unnecessarily high level. The 1978 US Airline Deregulation Act set the stage for other regions to follow which increased market and route access, allowed airlines regulate fares and granted the fifth freedom which was the right granted by states to allow a scheduled carrier move revenue traffic between foreign countries (Ison & Budd 2020; Belobaba 2016; Doganis 2005). It is worth noting that deregulations also came with some disadvantages such as market volatility, possible reductions in safety standards, non-uniform aviation practices and so on (Ison & Budd 2020).

The aviation industry is deemed as one of the fastest changing sectors within the transportation industry due to the frequent structural, cooperate and operational changes(Ssamula 2009). One of the most recent unpleasant events that hit the world is the Covid-19 pandemic and airlines are responding with changes, one of which is modifying their business models. Mrázová & Kazda 2021 predict five possible business models concepts that passenger airlines could adopt, which are Full-Service Carriers (FSC) would focus on price sensitive passengers, four engine aircraft would be replaced, domestic flights would be prioritized, business aviation would be expanded and “flight to nowhere” concept introduced.

3.1.1 Airline Business Models

In the past, airlines business models were distinct, falling into two categories, Low-Cost Carriers (LCCs) or Full-Service Carriers (FSCs) (Lohmann & Koo 2013). The FSCs business model traditionally operates using the hub-and-spoke networks while the LCCs business model operates using a point-to-point network structure (Gillen 2006). Regional carriers and charter airlines could also be added as two other airline business model categories making it four categories in total (Lange & Bier 2019). This is not the case anymore partly due to the concentration process, and reaction caused by competitive pressure. Therefore, business models will likely remain less clear in the coming years (Nair, Palacios Fernández & Ruiz López 2011). As airlines around the world keep twitching their business models to accommodate the several changes in the industry, African airlines are also under pressure to enhance their operations and profitability, (Ssamula 2009) argues that the best way for African airlines to improve efficiency is to find and adopt a sustainable business model.

Most African airlines follow the traditional FSCs and regional business model and majority of them are state-owned (50% of African airlines are about 51% state-owned) (Ssamula 2009; Heinz & O'Connell 2013; Klisauskaite 2022). Africa's airlines business models need reform as it is plagued with obstacles such as bad funding structures for owning, leasing, and maintaining newer and better aircraft, inefficient operational methods such as delays and long turnaround times, shrinking non-aeronautical revenue, high governmental and political influences and so on (Ssamula 2009).

3.2 African Airlines History and Development

African aviation development also encompasses African airline development, and according to (Lubbe & Shornikova 2017), African aviation development can be categorised into five main periods. The first of these periods was the colonial period which ushered in the basic tools needed for an aviation system; the second was after the World War II which was a turning point for civil aviation in Africa. The third period was the independence phase which African countries took advantage of by creating their own airlines. The fourth period was liberalisation and deregulation while the fifth period is the present aviation industry in Africa which is plagued with challenges and hopefully further development. The fourth and fifth periods were discussed thoroughly in the previous chapter and subchapter while this subchapter focuses briefly on the first three periods.

African airlines have always been in existed since the start of aviation but before independence, most African countries had air services that were mainly based on European agreement and relationships. Most African states on gaining independence began to arrange their own independent air services which were mostly government owned national carrier many of which failed (Guttery 1998).

The first two African airlines were South African Airways, established in 1934, and Ethiopian Airlines established in 1946. From the dates of establishment, it can be easily noticed that the African industry encountered a very slow rate of growth in its beginnings (Baron 2021). Aside national carriers, there has been a lot of effort made by African leaders to create pan-African (multi-flag) airlines since the independence of many African countries and the first one was Pan-Afrique which was owned by 14 countries, unfortunately collapsed in 2002. Other multi-flag that collapse include Central African Airways, East African Airways and West African Airways Corporation (Amankwah-Amoah & Debrah 2011).

Several more attempts have been made to establish pan-African airlines with few being a success, one of which is ASKY airlines which is a private commercial airline, set up in 2005 with its base in Lomé, Togo (Button & al. 2017). ASKY is a private airline which had

the support of regional banking such as The ECOWAS Bank for Investment and Development (EBID), The West African Development Bank (BOAD) and ECOBANK Group (ETI) in partnership with Ethiopian Airlines. ASKY is looked forward to as one who will fill the gap created by the closure of Air Afrique in 2002. So far, it has made profit consistently since 2017 (ASKY website). Perhaps the most recent attempt at establishing a pan-African airline is the proposed airline that would be a partnership between Kenya Airways (Kenya's national flag carrier) and South African Airways which is set to launch in 2023 (Lim Jean 2022).

Although, the airline industry is filled with cases like Air Afrique, African carriers have not relented in trying to pool their resources together to foster growth. A good example is Ethiopian airline which has financial stakes and ownership in multiple companies such as ASKY, Malawi Airlines, Ethiopian Mozambique Airlines, national carriers of Guinea and the Democratic Republic of Congo, Zambia Airways and many more. While these are intercontinental consolidations, there have also been some national partnerships such as the coming together of Air Peace, Arik Air, Azman Air, Aero Contractors, United Nigeria, and Max Air in March 2022 to form 'Spring Alliance' (Jonga 2022).

One of the most common features of the airline industry is airline closure and perhaps this feature is even more common in African aviation. To dive deep into how far airline development in Africa has progressed and what the current situation looks like, airline start-up would be discussed in the next subchapter alongside the common reasons for the closure of airlines.

3.3 Airline Start-up

The three raw ingredients needed to make a new airline are cheap money (capital), cheap aircraft and pilots, and currently it is easy to get these three ingredients, thanks to COVID. There's the availability of capital in form of venture money and investments, there are reasonably good and young aircraft and there's plenty of cabin crew looking for work (Udvar–Házy 2021). This situation has made starting or relaunching an airline tempting to a lot of people. In 2021, at least 36 proposed airlines were actively planning to launch within 12 to 24 months, with the majority in Europe (CAPAb 2021a). African countries are also not falling behind as many countries including Ghana, Nigeria, Uganda, and Tanzania- are planning to relaunch their national carriers (Howwemadeitinafrica 2019). While this is all good news, there's also bad news which is that having the three ingredients needed to start an airline does not equate profitability and survivability. A study by (Michaux 2020) discovered five key success factors for airline start-ups which were financial resources, supply

chain integration, industry experience, product innovation, and R&D alliances. Unfortunately, lack of these success factors coupled with the challenging nature of the aviation industry often lead airlines (both old and new) to their demise.

3.3.1 Usual patterns and reasons for the closure of airlines

The aviation industry is not new to airline closure, as closure has always existed alongside airlines. In 1978, following the US aviation deregulation, 120 start-up airlines began and only about two of them currently remain (Udvar–Házy 2021). In 2017, 79 airline start-ups entered the aviation scene, and 29 airlines exited the scene; the year 2019, that was supposedly a good year for the aviation industry witnessed 23 airlines exit as well (Kramer 2020), and so far, 46 airlines have launched since the Covid-19 pandemic (Sun, Wandelt & Zhang 2022). The environment airlines find themselves are often unstable and chances are things are not going to get better anytime soon. Some of this instability come from standard forces such as economic downturns and regulatory changes while some come from external forces such as terrorism, disease outbreaks, wars and so on (Taneja 2017).

Although, African airlines face this instability, they also face some instability that are often peculiar to them alone such as political interference, state ownership, and subsidies that have often made market forces hostile leaving African carriers struggling to compete with their counterparts (Heinz & O'Connell 2013). Outside this instability, the airline industry is also highly capital-intensive, with aircraft being the biggest fixed cost (Ssamula 2009). The price needed to finance a start-up airline varies from country to country, business models and current economic situation, however about a minimum of USD 10 million to USD 20 million is needed have an airline with 4 narrow body aircraft like Boeing 737 or Airbus 320 with 10 domestic destinations (Issac 2022).

Airlines are also burdened with making the best decisions on fleet, facilities, labour contracts, distribution agreements, and computer systems, these decisions are often very expensive and inflexible (Taneja 2017). The result of all these instability, challenges, high capital investments, rapid changing environment, uncontrollable external forces, heavy and strict regulations, and standards (as described throughout this chapter) often leave African airlines poorly managed and financially bankrupt which can result in either consolidation or total collapse (Button & al. 2017).

Aside from several unfortunate occurrences such as the 9/11 terrorist attack, Iraq war, SARS epidemic, global financial crisis, Ash-cloud in Europe, Covid, Russia-Ukraine war, that have plagued and disrupted the aviation industry and sometimes caused airlines to collapse, there are still other common reasons as to why airlines collapse. It is important

to note that most times the primary reasons airlines collapse is because of making more financial losses than they can bear, however there are numerous reasons for these losses. From looking at the over 30 airlines that collapsed between 2018-2019, there were some common reasons identified, the first reason was that airlines wrongly predicted the cost of operations such as fuel costs, labour costs, and others, which usually fluctuate. The second reason was oversupply, too many airlines were competing for few passengers, while the third reason was overreaching as some airlines expanded faster than needed (Bailey 2019). Unfortunately, not so much research has been done in the global airline industry to identify the common causes of airline failure. Instead, most research are tailored towards big or unique individual airlines that collapsed or at the verge of collapse. Some of the research with focus on African airlines include “Air Afrique: the demise of a continental icon” by (Amankwah-Amoah & Debrah 2014), Y; “The demise of 1Time Airline and the reaction of various interest groups” by (Henama & Sonwabile Henama 2014); “Can We Just Let a Giant Fall? Government Interventions and the Impact of Covid-19 on South African Airways” by (Makumbe 2021); “The Low-Cost Carrier Bandwagon: Lessons for Skywise Airline” by (Henama, Acha-Anyi & Sifolo 2016)among others.

One way, airlines round the world has fought to stay afloat is by sourcing for more investments, consolidations, and partnerships. All these has been possible through regulatory bodies and associations between airlines, the next subchapter would focus on the aviation regulatory bodies and association within Africa.

3.4 Aviation regulation bodies and Associations in Africa

The two most important aviation bodies in the world are International Civil Aviation Organisation (ICAO) and International Air Transport Association (IATA). ICAO, founded in 1944 is the organization with a focus in public international air law, it develops principles and techniques of international air navigation, it is not international aviation regulator (Loh Chris 2022; Bartsch 2022). IATA on the other hand is a trade association among world’s airlines founded in 1945 representing 230 airlines which is about 83% of global traffic (Brancker 1977; IATA website 2022). IATA is considered a non-governmental association and its main role is to represent commercial airlines round the world while ICAO is a branch of the United Nations, and its main role is to act as an intergovernmental association helping with diplomacy among countries related to air transport matters (Loh Chris 2022).

In a bid to not just survive but to thrive, African aviation experts and members have also created several regulatory bodies to foster growth and development in African’s aviation

industry. All information below regarding the aviation bodies or association are gotten primarily from the association's website and more focus would be given to regulatory bodies and associations pertaining to airlines.

African Airlines Association (AFRAA) is a trade association that is open to African airlines with a vision to promote, serve African airlines and champion Africa's aviation industry. It was founded in 1968 with its headquarters in Nairobi, Kenya, and currently has 45 airline members from across Africa. AFRAA also has numerous key partners such Boeing, Amadeus, Mitsubishi, Lufthansa Consulting Group, Airbus, Sabre, and many others (AFRAA website 2022).

African and Malagasy Civil Aviation Authorities (AAMAC) is an organization created by 17 African and Malagasy members of The Agency for Aerial Navigation Safety in Africa and Madagascar (ASECNA) on January 20, 2012. The objective of the organisation is to establish and maintain uniform regional safety, regulatory certification processes, and environmental protection, and assist member states of fulfilling their obligations under the Chicago Convention (AAMAC website 2022).

African Civil Aviation Commission (AFCAC) is the civil aviation commission of the African Union responsible for coordinating civil aviation matters and enabling an African aviation that is robust enough to support the social and economic development of Africa. It is also the executing agency of the Yamoussoukro Decision of 1999 and acts as a middleman between African aviation and other aviation organizations such as ICAO (AFCAC 2022).

African Airlines Safety Council (AFRASCO) as the name implies is a safety group established in 1989 to address the air safety concerns in Africa. Its members are mostly airlines and airports from Eastern and Southern Africa such as Airports Company South Africa, Ethiopian Airlines, Egypt Air, Kenya Airways and so on. It is also a regional safety organisation partner of ICAO alongside many other safety organisations (ICAO 2022).

The aviation Industry plains in Africa would most likely remain rocky for a long time, and so, the support, guidance, and relief these aviation regulatory bodies, associations and organizations offer is of utmost importance.

4 Theoretical Framework

The theoretical framework of a research is the skeleton for its data analysis and structure. This chapter presents the definition of theoretical framework, background to the theoretical framework chosen for this thesis, explanation of PESTEL and Marketing Mix which are the theoretical framework chosen for this thesis.

4.1 What is theoretical framework?

A theoretical framework is a logically curated and linked set of concepts, thoughts, and premises— derived from one or more theories—that a researcher creates as the groundings of a study (Varpio, Paradis, Uijtdehaage & Young 2020). Theoretical framework can be viewed as an answer to two questions which are “what is the research question?” and “why the approach taken for the research is feasible?” (Lederman & Lederman 2017). In summary, a theoretical framework is a reflection of the process a researcher employs to make use of a theory/theories in research (Varpio & al. 2020).

The theoretical framework can be created before the research study begins and remain largely unchanged throughout the study or can be created after the data collection and analysis. The type of research whether objectivist defunctive or subjectivist reductive determines how and when the theoretical framework is created (Varpio & al. 2020). This thesis uses an objectivist defunctive research which means that a hypothesis is formed first and then data collection and analysis is carried out to prove or disprove the hypothesis. Using this research implies that a theoretical framework is first constructed before data collection and analysis begins, although the framework can be adjusted as the research progresses.

The theoretical framework used in this thesis is adapted from the framework developed by (Denton 2020)and used in the study of “Why Do Most Small Businesses in Liberia Fail”. In this study, he identified that businesses operate in two environments namely micro and macro environments. He also used the Marketing Mix and PESTEL analysis to analyse whether the causes of business failures fell under the micro and macro environments of businesses. For this thesis, Marketing Mix and PESTEL were used to analyse whether the causes of failure fell under the micro and/or macro environments of airlines. Analysing the causes of airlines failure and categorizing them into micro and macro environment would help identify the pattern to the failure. Before diving deep into theoretical framework, it is important to establish the concept of organizational failure which is a major theme in this

thesis. Topic about failing airlines, patterns of collapse. Organizational failures, causes can be internal/external, PESTEL/Marketing mix.

4.2 Organizational failure

The key theme discussed in this thesis is the cause(s) of the failure or collapse of African airlines organizations. Understanding organizational failure is, therefore, necessary to discuss this theme effectively. So far, business failure has been mostly researched in economics and finance. with the rise of it following the 1930s economic depression (Walsh & Cunningham 2016). (Weitzel & Jonsson 1989)defines organizational failure as when organizations get into the state of decline when they fail to foresee, forecast, observe, avert, overcome, or adapt to external or internal forces that negatively affect the organization's long-term survival. (Witteloostuijn 1998) defines decline as the process of shrinking performance over a lengthened period, and performance is measured in terms of profitability.

Both (Witteloostuijn 1998) and (Weitzel and Jonsson 1989) propose that organizational failure is a process and there are stages to it, (Witteloostuijn 1998) mentions that there are four possible outcomes to this process. The first is the organization exits the industry once profit is zero. The second outcome is that the organization successfully goes from loss to profit. The third is that the organization makes a series of losses before eventually leaving the market and the fourth is that the organization remains in the market despite making series of losses.

Researchers have examined numerous types of probably causes of organisational failure, such as statistical and psychological (Artinger & Powell 2016) or objective and subjective ones at both individual and firm level (Jenkins & McKelvie 2016). One thing that can be agreed upon is that an organization’s failure to do something positive about the effect of internal and external forces would most likely enter a state of decline.

4.2.1 Macroenvironments and Microenvironments

The macro environment refers to all the variables and factors outside of a business that tend to have positive or negative effects on the existence and growth of the business. The business usually has little to no control over the macro environment, although it can try to adjust itself to it. Some of the variables and factors of the macroenvironment are economic (such as global inflation), socio-cultural, political, technological, physical, and international (Beer 2008; Cronje, du Toit, Badenhorst & Motlatla 2000).

The analysis tool chosen to tackle the macroenvironment of airlines in this thesis is the PESTEL Environment. PEST(EL) analysis is a powerful, compelling, and broadly used

tool for understanding business strategic risk. It describes the influence and the effects of the external macro environment on a firm's competitive position (Sammut-Bonnici & Galea 2014). PESTEL analysis on its owns, primarily provides a commonplace idea about the macroenvironment and situation of an organization (Yüksel 2012). PESTEL is an acronym for Political, Economic, Social, Technological, Environmental and Legal factors (Sammut-Bonnici & Galea 2014). The origin of PESTEL comes from Francis J. Aguilar, a Harvard professor on strategic planning who released a book titled *Scanning the Business Environment.* Aguilar proposed ETPS which stands for Economic, Technical, Political and Social Influences. However, over the years this framework has been adjusted and updated to different concepts such as STEP (same meaning as ETPS), STEPE (Social, Technical, Economic, Political, and Ecological), PEST, and PESTEL (Frue 2017). The figure below gives a brief explanation of the PESTEL analysis.

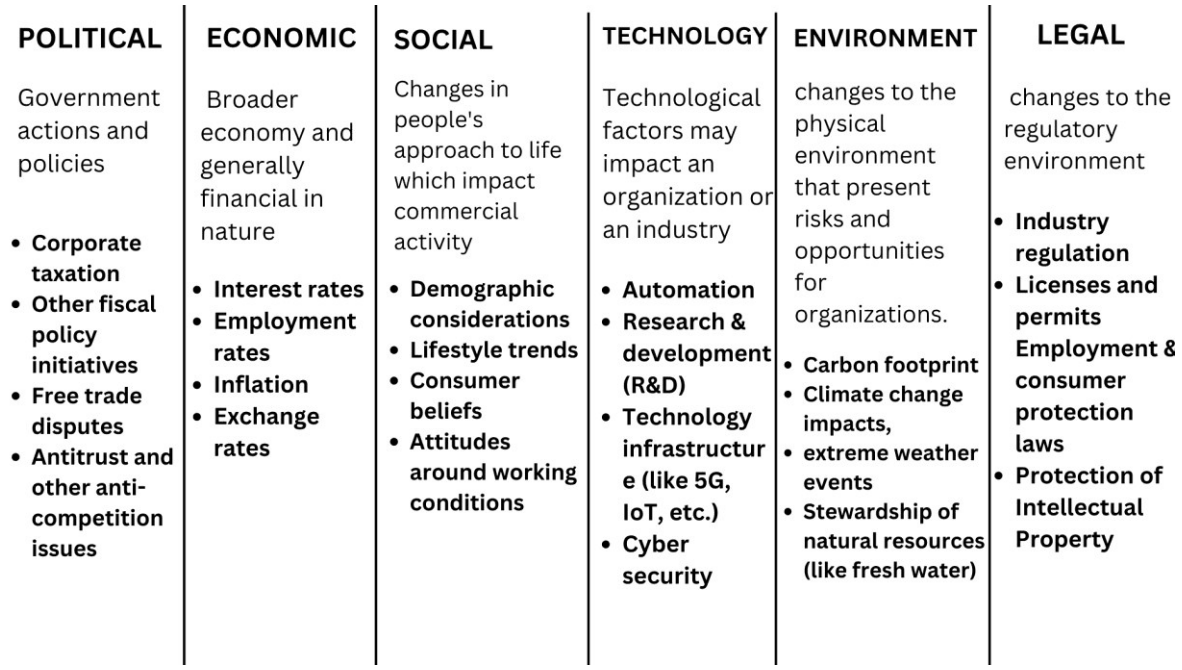

Figure 5. PESTEL explained (adapted from (Peterdy 2022))

Microenvironment is the variables and factors that are within the business itself and can be controlled by the business and affects the business either positively or negatively. The microenvironment of a business includes its mission and objectives, management structure, resources, and culture (Beer 2008; Cronje & al. 2000; Cant, Strydom, Jooste & Plessis 2006). The analysis tool chosen to tackle the microenvironment of airlines in this thesis is the Marketing Mix Environment. The phrase "Marketing Mix" was developed by Neil Borden who first started using the phrase in 1949 (Baalbaki 2015). In his study of advertising, (Borden 1964) sort to answer the question of "What combination of marketing procedures and policies has been or might be adopted to bring about desired behaviour of trade and consumers at costs that will permit a profit?", answering this and other related

questions led to the development of marketing mix. (Borden 1964) in his article recounted his proposed 12 elements of marketing mix namely: Product, Pricing, Branding, Channels of Distribution, Personal selling, Advertising, Promotions, Packaging, Display, Servicing, Physical handling, and Fact finding/analysis. The marketing mix has been developed and updated throughout the years and one of such development was by McCarthy in 1960 modified the marketing mix to the four's P which are Price, Promotion, Product and Place. The latest of such update is by Bernard Booms and Mary Bitner who added People, Packaging and Process to the four P (Baalbaki 2015). The figure below gives a brief explanation of the marketing mix, seven P.

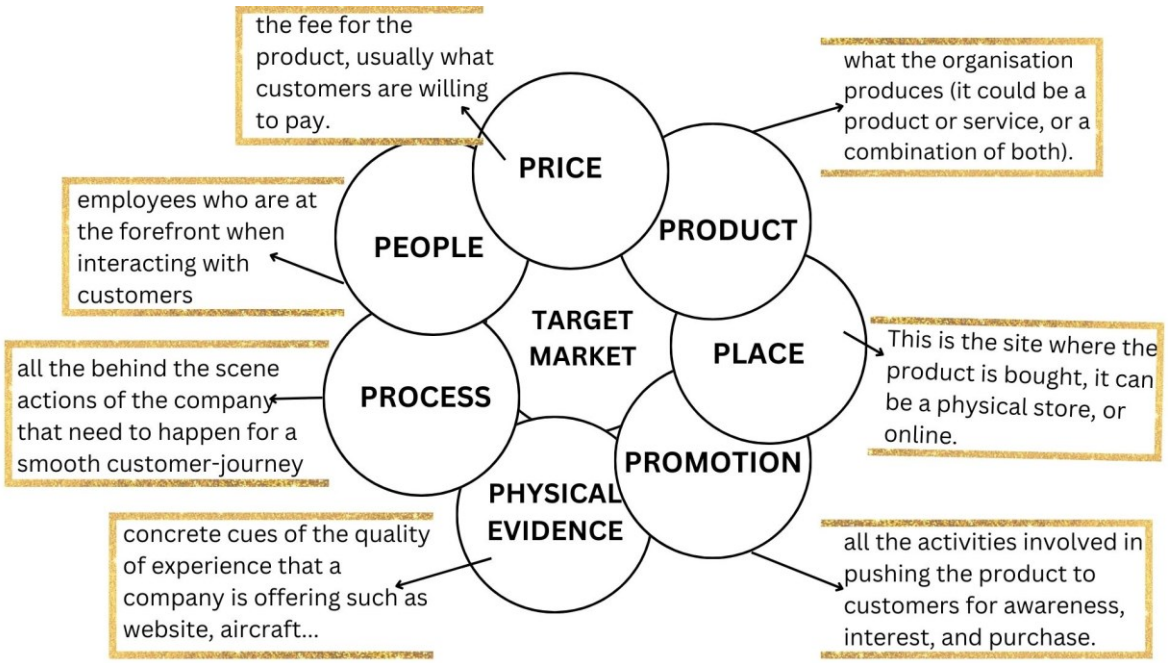

Figure 6. Marketing Mix explained (adapted from (Allen s.a.))

The reasons for the collapse of African airlines would be categorised using the PESTEL analysis tool and Marketing mix tool which would be used to identify whether the causes are microenvironment and/or microenvironment.

5 Methodology

Research, primarily, is a scientific enquiry that is essentially prompted by simple human curiosity which takes different forms (McNeil 1990) and takes off with at least one question about an area of interest (Williams 2007a), which in the case of this thesis is finding the pattern of collapse or fall of selected African airlines. Research question(s) help researchers to select the suitable approach, or perspective from which to make sense of the area of interest (Williams 2007b). To address the thesis question, a system of methods is going to be applied to the research question, which is where the idealized world of hypotheses and theories meet up (SAGE 2019). After identifying the research topic and formulating questions, selecting the appropriate method is the next most important decision (Abutabenjeh & Jaradat 2018). This chapter describes the different research methodologies and argues the suitability of the best methodology for this thesis.

5.1 Research Methodology Types

Research methods are the building blocks of the scientific enquiry business, it is the “how” for constructing systematic knowledge (Patten & Newhart 2018). (Creswell 2014) identified three types of research methodologies: quantitative, qualitative, and mixed methodology. The selection of a research approach is based on the nature of the research problem being addressed, the research outcome, and the researchers’ personal experiences, and the audiences for the study (Creswell 2014). An assessment on the type of data needed to answer the research question also helps the researcher select the type of method suitable for the research (Williams 2007b). Each research methodology has its strengths and weaknesses, and certain research topics are more appropriately suited by a particular methodology compared to other methodologies (Abutabenjeh & Jaradat 2018).

Qualitative research is an approach for exploring and understanding the meaning, opinions, and views that individuals or groups ascribe to a social or human problem (Creswell 2014). The design of qualitative research is affected by several components, for example, the research questions, aims, and theoretical backgrounds of the thesis (Schreier 2018). As the name implies, qualitative research typically depends on non-numerical data collection (Robson 2011) and it is evident that most qualitative researchers first identify a text or social object that is suitable for analysis (Jackson, Drummond & Camara 2007). Qualitative research can be divided into five areas or methods namely: case study, ethnography study, phenomenological study, grounded theory study, and content analysis (Williams 2007b).

Quantitative methodology emerged around 1250 A.D. and was pushed by investigators with the need to quantify data, it is an approach for testing objective theories by examining the relationship among variables and these variables, in turn, can be measured, typically on instruments, so that numbered data can be analysed using statistical procedures (Williams 2007a; Creswell 2014). It involves statistically assessing some aspects of a research problem using experimental or survey design procedures (Jackson & al. 2007) and typically depends on numerical data collection (Robson 2011). It can be categorized into three categories namely: descriptive, experimental, and causal comparative. The findings from quantitative research can be predictive, explanatory, and confirming (Leedy & Ormrod 2001; Williams 2007a; Williams 2007b).

Mixed methods research resides in the middle of qualitative and quantitative methods because it incorporates elements of both qualitative and quantitative approaches (Creswell 2014). It recognizes the importance of traditional quantitative and qualitative research but also offers a powerful third paradigm choice that often provides the most informative, complete, balanced, and useful research results (Johnson & Onwuegbuzie 2016). The overall goal of mixed methods research is to expand and strengthen a study's conclusions and, therefore, contribute to the published literature (Schoonenboom & Johnson 2017).

Research methods and research designs do not refer to the same thing, research design is a plan for collecting evidence that can be used to answer a research question (Vogt 2006). Many authors have come up with different types of research design, one prominent list is by (Vogt 2008) which gives seven research designs namely: document analysis; secondary analysis of data; naturalistic observation; surveys; interviews including focus groups; experiment and quasi-experiments; and participant observation. (Robson 2011), also present another list of research design namely: form of flexible, fixed, or multi-strategy. Flexible design which traditionally include case studies, ethnographic studies, and grounded theory studies, while fixed design traditionally includes true experiments, quasi-experiments, singe-case experiments, non-experimental and so on.

5.1.1 Suitable Research method and design for this Thesis

One of the difficult aspects of research is deciding what type of research method and design to be used, and it is also arguably one of the most important questions (Vogt 2008). However, it is not an impossible task, simply put, the nature of one's research determines the choice of research method. To expand on that idea, the selection of a research method is based on the nature of the research problem being addressed, the expected research outcome, the researchers' experiences, and the audiences for the study (Creswell 2014). Qualitative or quantitative data is not a research design determinant as all designs

can be used to collect qualitative or quantitative data or both, this implies that data type should not be the only factor considered when choosing a suitable research design (Vogt 2008). A deep understanding of the research topic, and the different research methods and design should be factored in when selecting the suitable research method. As explained earlier, quantitative method provides an objective measure of reality while qualitative method allows the researcher to explore understand the complexity of an area of interest (Williams 2007b).

The research methodology adapted for this thesis is the mixed methodology meaning, a combination of quantitative and qualitative methods (Creswell 2014). This is because the thesis is split into two parts, the first part which is the major part of this thesis involves analysing airlines that have collapsed using existing documents and the second part of the thesis involves curating a questionnaire to get additional input on the causes of airline demise. Airline analyses using existing documents are a type of qualitative research method while the questionnaire is generally a type of quantitative method. The suitability of using qualitative and quantitative methodology is argued below.

The characteristic of this thesis is compared to the characteristics of a qualitative research to determine what its suitability for this thesis. (Creswell 2014) and (Hammarberg, Kirkman & de Lacey 2016) also give similar characteristic to qualitative research which align with the thesis' purpose and outcomes.

Table 1. Characteristics of qualitative research (adapted from (Hennink, Hutter & Bailey 2020))

	Qualitative Research	This Thesis Research
Objective	To achieve a contextualized understanding of behaviours, events, concepts, interests.	To discover and understand the major cause of the fall of African airlines
Purpose	To understand why? How? What? And influences/context of such questions.	to answer, "why have previously existing African airlines collapsed?", "what can African airlines learn from history?", and "what is the primary cause of the fall of African airlines?"
Data	Words (textual data)	Textual data
Study Population	Small number of participants	31 airlines analysed

Data Collection Methods	In-depth interviews, observation, existing document analysis	Existing document, press release and news report.
Analysis	Analysis is interpretive not statistical	Data gathered to be interpreted to find the reasons and patterns to African airline closure.
Outcome	To develop an understanding and explain phenomenon	To understand the reasons African airlines closed and proffer solutions.

From the table above, it is safe to say that the qualitative research method is a fit for the thesis. However, this study analyses archival data of African airlines which are out of business. The quantitative data on the other hand attempts to provide up-to-date data to assess the opinion of respondents and analyse if their views match the results gotten from the archival qualitative data. Specifically, the quantitative methodology adopts questionnaire instrument which has been found to be more objective than qualitative methods as the latter is liable to the researcher's subjectivity (Williams 2007b). That is, to achieve an objective study alongside an up-to-date data, quantitative methodology is suitable to supplement the qualitative methodology and provide extra credibility to the study.

5.1.2 Case Study- Research design

A research design is a comprehensive planning process used to collect and analyse data to increase the understanding of a given topic (Abutabenjeh & Jaradat 2018). From the numerous research designs mentioned in this chapter, case study has been chosen as the most suitable research design for this thesis.

Case study is an approach that enables researchers to develop an in-depth view and analysis of a particular event, entity, or situation (Rule & John 2011). It is not limited to just one scope as researchers have used it in a wide arrays of topic ranging from health histories of individuals/groups to election campaigns. Case studies can be carried out on three levels namely: micro-level, meso-level and/or macro-level depending on the phenomenon and actors involved. Micro-level has to do with personal and interpersonal relations, meso-level is concerned with organisational and institutional level while macro-level is focused on large communities and nations. The most common level is the meso-level which is what is being used in this thesis (Swanborn 2010). The focus of this research is African airlines which is further streamlined into fallen African airlines. That is, airlines established

in Africa which then seized to exist. Therefore, the case study of this research is fallen African airlines. Data for the case study will be derived from a mixed methodology of archival analysis and questionnaire. The data will be further analysed using document analysis and descriptive statistical tools.

5.2 Data

The goal of any researcher is to collect relevant data that is useful for the study in question. Each researcher must decide on what data type to use and how the data collection tools should be implemented to the best effect (Lapan, Quartaroli & Riemer 2012). This section covers the data types, data collection tools, evaluation for data collection, population and sample, and data analysis of the thesis.

5.2.1 Data Type Source and Data Collection techniques

Regardless of the research method and design chosen, the type of data source collected usually fall into two broad categories namely: primary and secondary data sources. Primary data are real time direct data gathered specifically for the research using the data collection technique that fits best (Hox & Hennie 2005). While secondary data are already pre-existing data gathered by another person that is accessible and available to the researcher without having to directly gather it from its primary source (Johnston 2014). Data collection tools for primary data can be from directly conducting surveys, interviews, experiments, observations and so on while data collection for secondary data include archives, past surveys, interviews, experiments, observations, videos and so on (Hox & Hennie 2005). Expatiating on secondary data, sources for secondary data include a wide variety such as government statistics, university manuscripts, historical and anthropological research, archives, literatures, local records, maps and cartographic services, newspaper, and so on (Pratt & Loizos 1992). The data type source collected for research in this thesis is primary and secondary data (which is the major data type in the thesis) because of the nature of the research question. The data type usually determines the possible option for data collection method.

There is no single best way of collecting data; the method chosen depends on the nature of the research questions, research method and research design (Wilson & Sapsford 2011). The main aim of collecting data is to provide materials for an empirical analysis of a phenomenon that the research is about (Flick 2018). All data collection tools aim to obtain valid and reliable data which can be used to thoroughly answer the research question (Wilson & Sapsford 2011) Data collected must be reliable, valid, and sensitive, objective, and feasible to enhance the research's quality (Creswell 2014).

Data collection for Qualitative research is an intimate process (Sohaib & al. 2020) and the data collection steps include setting the boundaries for the study, collecting information through data collection tools/techniques, and establishing the protocol for recording information (Creswell 2014). Qualitative researchers usually tend to prefer more open-minded, less structured data collection techniques (Morgan & Harmon 2001) and are interested in accessing experiences, occurrences, and interactions, in their natural context. This means that for data collection, qualitative researchers enter the sphere they want to study and do not transfer these spheres into their scientific environments, such as laboratories (Flick 2018). There are some specific data collection techniques that are applied to qualitative research. Narrative observations, participant's observation, archival measure/documents, content analysis, interviews and focus groups are data collection techniques quite likely to be used in qualitative research while coded observations and questionnaires (survey) are possible options too (Morgan & Harmon 2001). (Creswell 2014) sums up qualitative data technique into observations, interviews, documents, and audio-visual materials. To be more specific, the sources of data collection for case studies include documents, archival records, interviews, direct observations, physical artifacts and so on (Yin 2014).

This study uses both primary and secondary data collection tools. The primary data is gotten through a quantitative method (questionnaire) while the secondary data is gotten through archival and non-archival documents such as news reports, press release statements, archived websites, and aviation databases. In terms of the secondary data collection technique, the archival documents enable a deep analysis of each airline that is considered in the thesis. An archive is a mostly incomplete historical record usually containing raw data at its most elemental level (Harris 2006). Archival research involves inspecting materials from and about an organization in its most basic form; it usually includes historical documents study whose information is not easily accessible presently (Ventresca & Mohr 2001). The benefit of using archival documents is that most archives safeguard and grant access to the authentic primary source. However, a major issue with this data collection technique is that most archival documents are usually a wide range of data, it can be a bit difficult to analyse (Harris 2006). Also, incomplete archives can pose a serious problem when trying to make information out of available data. These issues would be combated by combining archival documents with non-archival documents and related research about this thesis, doing this would help narrow down the wide variety of data to relevant data and bring extra reliable opinions into the data discussion pool.

For primary data, the data collection technique is a short semi-structured questionnaire, using an online questionnaire tool called Webropol with multiple choice and open-ended

questions. This data collection tool is in line with the quantitative research methodology because it involves measurement, numbers, statistics, and charts which are characteristics of the quantitative research method (Creswell 2014). Usually, questionnaires are used in survey situations, where the purpose is to collect data from a relatively large number of respondents (about 100 and 1,000) (Rowley 2014). However, in the case of this thesis, the sample for the questionnaire is too small to be called a survey, and not deep enough to be referred to as an in-depth interview (IDI) Therefore it was referred to as a short semi-structured questionnaire. The semi-structured questionnaire followed the typical structure of a survey except in the number of respondents.

Questionnaires are often used in descriptive research like this thesis. To design a questionnaire, the first step is to choose a topic, then determine what variables are to be measured in the questionnaire. Next is to select suitable data collection method (online, face-face), formulate the final questionnaire questions and choose the research's population and sample for the questionnaire (Saris & Gallhofer 2014). The questionnaire is controlled by the respondent who is often untrained, and it, therefore, calls for a more sophisticated layout and preparation (Wilson & Sapsford 2011).

Usually, in survey research, it is not only the characteristics of a sample that of interest but also those of the population from which the sample has been drawn (Schofield 2011). This means that this research would take interest not only in the sample but also in the population by taking note of their characteristics. Questionnaires usually take the form where respondents are asked to read the questions and to answer either by ticking one of the answer boxes provided, or to write in their own 'free response' to a question (Wilson & Sapsford 2011). A major challenge with the questionnaire data collection tool is that there is little control over how a respondent completes a questionnaire, which makes it hard to rely on respondents.

The questionnaire is based on the theoretical framework adopted in this thesis which are the internal and external factors that affect a business negatively using Market mix and PESTEL to further explain these factors. The questionnaire used in this thesis was adapted from existing surveys used in two different research, the first research was about the relationship of 7P Marketing Mix by (Anjani, Irham & Waluyati 2019) while the second research was about PESTEL parameter selection framework for sustainability assessment by (Iacovidou & al. 2017). Adapting the questionnaire from this research ensured the reliability and validity of the questionnaire as the researchers already tested for this. The questionnaire had 8 questions in total with the first four questions about the demographic of the respondents (age, sex, years of experience and job within aviation sector), while the last

four questions were about the factors affecting airlines (Appendix 1). The questionnaire was open for only 4 days and shared via LinkedIn, WhatsApp, and Email to respondents, and in total there were 32 respondents. The purpose of this semi-structured questionnaire is to get additional input from aviation experts and workers in Africa to the already existing secondary data. The main data source and collection technique would be questionnaire and archival records.

5.2.2 Research's Population and Sampling

After determining, the right data type and data collection technique research, it is good to determine the population and sample of the research which is a classification of data. A research population is the whole set of individuals, or elements, or events or organizations, or anything of the researcher's interest, it could also or include observations, judgments, abstract qualities (Schofield 2011). This population which can be very diverse is often sampled, by selecting carefully from the population to represent the population in research (Schreier 2018; Barreiro & Albandoz 2001). A sample is a set of elements selected in some way from the population and he terms "sampling", "selecting units", and "selecting instances" can be used interchangeably (Schreier 2018; Schofield 2011).

Sampling is done in times when the population is a lot or when the population ceases to exist if all of it are analysed (Barreiro & Albandoz 2001). It is done to save time, resources, and effort, but also to get consistent and unbiased estimates of the population status that is being researched (Schofield 2011; Acharya, Prakash, Saxena & Nigam 2013).
A good conclusion from research, requires the use of the right choice of sampling and the different sampling techniques help achieve this. The different sampling techniques are commonly agreed among researchers, with the most common being probability, purposive, or no-rule sampling (Barreiro & Albandoz 2001; Schreier 2018), (Schofield 2011) also proposes similar sampling techniques namely: random, convenience, and purposive sampling.

The population for the qualitative part of this research is all African scheduled airlines that have closed within the past 20 years, and according to CH-Aviation's database, that is 169 airlines. The sample from this population is 31 airlines and purposive sampling was used in selecting this sample. This represents 18% of the whole population and each airline from the sample represents approximately 5 airlines from the population. The airlines were divided into 4 categories based on the number of years they existed and operated, then a few airlines were selected from each category based on the amount of quality data available. This ensured that the sample used in this thesis are reliable, and a true reflection of the population. Although the sample size for the airline analysis is small, it does not

matter because of the reductive, stepwise approach used in this thesis. This means that as the scope of the study reduces, the level of detail in the data analysis increases.

The population for the quantitative part of this research was all aviation workers and experts that had experience in African aviation industry. The method for sampling this population was purposive and random. Purposive sampling was used to target aviation experts in the industry, and this was done by sending the questionnaire directly to these experts via email and LinkedIn. Some of the aviation experts contacted included senior managers at African Airlines Association (AFRAA) and African Civil Aviation Commission, former head of Public Affairs at the National Airspace Management Agency, winner of Aviator Africa Award in South Africa and so on. The random sampling was done by publicly sharing the questionnaire and specifying that the questionnaire is meant for only aviation workers and experts with experience in the African aviation industry.

5.2.3 Data Analysis

Qualitative research is more holistic and often involves a rich collection of data from various sources to gain a deeper understanding of the study (Nassaji 2015). Data analysis comes after data collection, and it involves multiple steps of analysis and approaches for analysing and documenting the accuracy of the data collected (Creswell 2014). Qualitative research collects data qualitatively, and the method of analysis is also primarily qualitative (Nassaji 2015). Analysis of qualitative data progresses through the classification of ideas, themes, topics, activities, and other categories relevant to the study (Lapan & al. 2012). The first step is to examine the data gathered from the preliminary research ideas by classifying each event into as many categories as the data provided (Sohaib & al. 2020).

To interpret the data, qualitative researchers triangulate different types of data, comparing results to find and explain commonalities and differences (Lapan & al. 2012). Analysing the data should follow an order, and the findings should be categorized according to the data categories which the research design has provided (Wilson & Sapsford 2011). In summary, data analysis involves collecting raw data, organizing the data, reading through the data, coding the data, describing themes, interrelating, interpreting, and validating (Schofield 2011).

The result of data analysis is an interpretive document or documentary that reflects both the views and voices of the data and the theoretically framed analysis of the researcher (Lapan & al. 2012). The aim is often to arrive at materials that allow for producing generalizable statements by analysing and comparing various exemplars, phenomena, or cases

(Flick 2018). The final objective of this thesis is to provide a reasonable and accurate answer to the research question and data analysis would provide the answers. In the study, the data analysis tool adopted for the qualitative data is a document analysis while that adopted for the quantitative is descriptive statistics specifically frequency count and percentages.

Document analysis is a qualitative analytical tool used to examine all components of a document such as content, context, source, and date (Love 2003). Document analysis is used in situations whereby the event can no longer be experienced or monitored. This is why information from document analysis needs to be thoroughly contextualised and evaluated to ensure their reliability (Bowen 2009). Document analysis involves defining objectives, gathering resources, categorizing information, asking in-depth questions, examining context, and making conclusions (Moe & Karppinen 2012). The steps involved in document analysis are determining the document to be analysed, scanning, studying, and deciphering the context and content of the documents (Bowen 2009). Document analysis is a thorough analysis tool as it goes beyond assessing content such as thematic analysis and content analysis (Love 2003).

The quantitative data of the study will be analysed using descriptive statistics tools. The descriptive tools were frequency and percentages, and data was presented in pie charts, bar charts and tables. Descriptive statistics is a quantitative statistical tool that reports an overview of data in precise datasets (Kaur, Stoltzfus & Yellapu 2018). Descriptive statistics uses visual tools to outline the data, making it easily accessible and observable (Lee 2020). Descriptive statistical tool will enable the study interpret data in a clear, composed, and logical data.

The 169 airlines (population data) are all the airlines that have closed within the last 20 years and 31 airlines (sample data) would be selected based on the availability of quality data. The data depth for the population would include the basic description such as name, business model year of operations, location, founding year and closure year. The sample would dive deeper into more information about the airlines such as business model, unique quality, background, and reason of closure. PESTEL and Marketing Mix would be used as the theoretical framework for the sample. The data about the African airlines that have closed in the last 20 years along with the founding and closing year are gotten from Ch-Aviation database. Ch- Aviation is an aviation database and news outlet with focus on aircraft, lessors, airlines, airports, routes, capacity, and schedules.

6 Qualitative Data Presentation: Synopses of Selected Failed Airlines

As explained in the methodology, this thesis takes on the document analysis method to deeply analyse the airlines. Thirty-one airlines have been selected as sample out of 169 population (Appendix 2), that is, the total number of African airlines that went out of business in the period under consideration (20 years). Each of the selected airlines would be briefly described with information about their business model, region of operation, fleet size and type, destinations, unique quality, and the reason for closure. Unfortunately, out of the 169 airlines, there was no credible information about the dates of closure for eight airlines. This chapter details on each four categories with the description of the airlines.

6.1 Category 1: Airlines that operated for five years or less

This category are airlines that were founded, operated, and collapsed within the time frame of five years. There were 88 airlines in this category. Out of these, ten airlines based on the availability of quality data were selected. The synopses of the ten airlines follow.

1. Southeast Airline was a Low-Cost Carrier airline that operated in Kenya with a base at the Nairobi Jomo Kenyatta International (NBO) airport. The airline was founded and started operations in 2014 by African Express Airways (a Somali-owned Kenyan airline) and officially ceased operations on May 16, 2015. It provided domestic scheduled services flying daily between Nairobi to Mombasa with a 50-passenger aircraft. In an interview with *Business Daily Africa*, the Southeast Airlines general manager Mtalaki Mwamburi said the reason the airlines ceased operations was the high operating costs and tough competition from established airlines in the region such as Jambojet and Fly540 which had larger market shares. Jambojet is a LCC subsidiary of Kenyan Airways founded in 2013 with a fleet size of 6 while Fly540 is also an LCC that started operations in 2006 and was at the time flying to Kenya, South Sudan and Zanzibar (AfricanExpressAirways 2022; Ch-Aviation 2022; Fly540 2022; Business Daily 2015).

2. Flyafrica Namibia was a LCC subsidiary airline of Flyafrica and a joint venture between Namibia's Nomad Aviation and Mauritius-based flyafrica that operated out of Windhoek Hosea Kutako International Airport in Namibia. It was founded in 2014 and under the Flyafrica brand which prided itself as a gateway to Africa: with low fares, an increasing number of flights and new destinations. It operated a fleet of ex-CSA Czech Airlines B737-500 aircraft and flew domestic and regional flights from Namibia to South Africa, Zambia, Zimbabwe, and Botswana. In November 2015, Flyafrica Namibia was forced to cease all

operations after the Namibian Department of Civil Aviation (DCA) revoked its Air Operators Certificate (AOC) for using ineligible aircraft. An investigation was launched into the airline's wet lease arrangements with Nomad Aviation. Something like what happened to Flyafrica Zimbabwe also happened to its parent company, Flyafrica but its AOC was restored in 2016. However, despite plans to restart operations under another brand, multiple lawsuits from different investors have stalled and halted the plan (CAPA 2022a; Ch-Aviation 2022; Namibia Economist 2019; Flyafrica Facebook s.a.; Times Aerospace 2015).

3. South Supreme Airlines (formerly Feeder airlines) was a south Sudanese airline that was founded in September 2013 and ceased operations on September 10, 2015. It prided itself in being 100% owned by South Sudanese and had its base in Juba airport and offered domestic and regional flights using 2 Fokker-50 aircraft which were formerly used for Feeder airlines. In September 2015, the airlines ceased operations citing foreign currency scarcity and devalued Sudanese currency in the country as its reason. Foreign exchange scarcity was a big national crisis as the country has been at war with rebel groups. However, in 2017, the airline reappeared under a new brand "South Sudan Supreme Airline" but unfortunately, in 2021, a fatal accident involving South Sudan Supreme's Let 410 turboprop led to the death of 10 people. Following this accident, the government of South Sudan grounded South Sudan Supreme airline. As of today, South Sudan Supreme airline is yet to restart operations (Byaruhanga 2015; CAPA 2022b; Ch-Aviation 2022; Planespotters 2022; aviation safety net s.a.)

4. Fly Blue Crane was a south African regional airline founded in September 2015 by former South African Airways (SAA) and South African Express (SA Express) executives with a base in Johannesburg Oliver R Tambo International Airport. It offered flights domestically within South Africa and regionally to Mozambique and Tanzania and operated 2 Embraer ERJ 145 with a passenger capacity of 100. The airline's business model was in between LCC and FSC, operating small narrow aircrafts (associated with the LCC business model and offering services associated with FSC business model). The airline started experiencing some financial constraints in 2016, with many speculating that it was due to its empty flights and competition from SAA and SA Express. In February 2017, Fly Blue Crane's business rescue practitioner, Etienne Naude, reported in a statement that the airline would cease operations until its business rescue process has been completed to avoid bankruptcy. He said the business rescue process was to allow the airline to "restructure its operations, reach critical agreements and adjust its schedules". The decision was assumed by many to be a short-term process. However, from 2017 till now, Fly Blue Crane is yet to restart operations (SouthAfrica.To 2017; CAPA 2022c; Ch-Aviation 2022; alternativeairlines s.a.; Southern & East African Tourism Update 2017).

5. Eagle Atlantic airline was a very short-lived Ghanian airline that was founded in 2012, commenced operations in October 2013 and ceased operation in December 2013. On its Facebook page, Eagle Atlantic listed 7 destinations (Lagos, Dakar, Banjul, Monrovia, Accra, Abidjan, and Freetown) it would be flying to. It is unsure whether it got to fly to all these destinations while it was alive. It was a FSC with its base in Accra, Kotoka International Airport, and used a McDonnell (MD) 82 aircraft to operate its routes. The airline was founded to fill the gap left by Ghana Airways and Ghana International Airlines. Eagle Atlantic ceased operations after it returned its wet-leased sole aircraft (MD82) to its owners, Romania's Ten Airways. A wet-lease contract means hiring an aircraft, flight crew, and sometimes fuel and maintenance from the owner. This means Eagle Atlantic lost its leased aircraft, and crew. It is not certain why Eagle Atlantic returned the aircraft but it was reported that Ten Airways upon facing internal difficulties lost its aircraft leasing contracts with several other airlines including Air Moldova. With the aircraft leasing contract lost, Eagle Atlantic may have struggled to find quick replacements but failed, and thus ceased operations (ch-aviation 2014; Ch-Aviation 2015a; Eagle Atlantic-Airlines Facebook page s.a.; CAPA s.a.a)

6. Fresh Air was a Zimbabwean LCC that was founded in 2014 as a joint venture between 1time airline (a South African LCC) and Nu-Aero (a registered Zimbabwean company), this was the first LCC in the country. The agreement was that Fresh Air would get the licenses needed to fly within and outside Zimbabwe while 1time will bring the fleet needed for Fresh Air to fly. This agreement worked well as Fresh Air began flying some ceased routes of 1time and on the 2nd of November 2012, Fresh Air flew its first flight from Johannesburg and Victoria Falls. Unfortunately, beginning of 2013, Fresh Air had to cease operations as its owner, 1time had filed first for business rescue then finally for liquidation. Fresh Air was also on shaky grounds as in 2012, the Zimbabwean government announced its decision to bring back the then defunct national carrier, Air Zimbabwe. The demise of Air Zimbabwe due to excessive debt had left a gap in the market which Fresh Air had hoped to benefit from (SouthAfricca.To 2014; Douglas 2012; Ch-Aviation 2022)

7. Santaco Airline was a LCC with a unique business model founded by the South African National Taxi Council alongside 10,000 taxi-owners' shareholders in 2011. It was meant to be a taxi-air concept serving domestic routes within South Africa such as Lanseria, Cape Town, Bhisho and Mthatha in the Eastern Cape. The flights would have been on Boeing 737-200, which were to be leased in AirQuarius Aviation which was another South African airline that later went defunct in 2012. In September 2011, the first flight of Santaco Airline took place with a Boeing 737-200, cabin crews and dignitaries including the

then president, Jacob Zuma. Sadly, no other flight by Santaco Airline has been operated since that day. After several investigations, it was discovered that the first flight was a sham. The Boeing 737-200 aircraft was leased for only the day of the launch from Star Air Cargo, and was repainted to fit Santaco's brand, and everything concerning the flight were contracted for only one day. This investigation caused an uproar in the public as people thought the airline fiasco was a scam and demanded answers from Santaco. However, the airline kept silent. In 2014, the chief strategic manager of the South African National Taxi Council, had an interview with South Africa's *BusinessDay*, where he said plans to launch Santaco airlines had not been abandoned and the current market has made it difficult to launch the airline. A peer reviewed journal article by (Henama) identified reasons for the "almost launch" of Santaco, and the main reason was the lack of experienced aviation experts within the airline. It has been over 8 years since the public last heard of Santaco Airlines (Ch-Aviation s.a.; Henama 2013; Wet 2021; Wicks 2014)

8. Discovery Air was a domestic Nigerian airline that was founded in 2013 but started operations in 2014, flying between Lagos and Abuja, Port Harcourt, Uyo, and Yola. It was privately owned by Babatunde Babalola and had the backing of First Development Water Discovery which was a Nigerian firm. It operated 3 B737-300s of which one was a former Brussels Airlines while the other two are former Bmibaby airline. The demise of Discovery Air began with a bumpy road in January 2015, when its AOC was revoked by the Nigerian Civil Aviation Authority (NCAA), only 7 months after its first flight had been launched. The NCAA's Deputy General Manager of Public Affairs told the Nigerian media that Discovery Air AOC was revoked because they had failed to address the many concerns brought up during inspection. In April 2015, there was news about the NCAA reinstating the airline's AOC upon it passing a financial health audit, and the airline responded by trying to reassure the NCAA of its long-term business plans and efficiency such as paying up salaries and so on. Despite the effort and reassurance, it looks like the airline did not pass the financial health audit as its AOC has not been reinstated. An article revealed some of the struggles the company was facing. The major issue was lack of finances as there were alleged debt incurred by the owner of the airline. This might have led the company to engage in some cost-cutting practices that were not standard aviation practices. There were reports of delaying flights due to low patronage, disregarding aviation rules of safety, efficiency, and quality service, relying on revenue from ticket sales for fuel cost (an action that is seriously frowned upon by aviation regulators) and several other mismanagement action (airlinehistory 2019; Ch-aviation 2015a; Ch-aviation 2015b; Oyewale 2014a; Ch-aviation 2014a).

9. Punto Azul Airline was founded and commenced operations in 2013, with a base at the Malabo Santa Isabel International Airport in Equatorial Guinea. It operated scheduled flights to Bata, Accra, Douala, and Yaoundé Nsimalen using a pair of Embraer 145s and private charter and cargo flights for Equatorial Guinea's oil and gas industry through West and Central Africa. In 2015, Punto Azul announced that it would leave the scheduled market on April 19 but would continue charter flights. However, a few weeks after, a new managing director was appointed, and it was announced that the airline would continue scheduled flights. The airline did continue to operate until in 2017 when its AOC was revoked by the civil aviation authority of Equatorial Guinea (Autoridad Aeronáutica de Guinea Ecuatorial - AAGE). The AAGE announced that locally certified airlines were not authorized following ICAO standard requirements and a consequence of this was that Equatorial Guinea was enlisted on EU's backlist. In a bid to remove itself from the list, the AAGE tighten its aviation legislations and thus some airlines such as Punto Azul did not meet the new legislation. It is uncertain whether Punto Azul tried to meet the new regulations and resume operations in Equatorial Guinea (-AirlinesHQ s.a.; CAPA s.a.b; Ch-aviation 2015c; ch-aviation 2015).

10. Tchadia Airlines was the national carrier of Chad, a joint venture between the Government of Chad (51%) and Ethiopian Airways (49%) that started operations in 2018. It operated domestic and regional routes to destinations in Chad, Cameroon, Central Africa Republic, Nigeria, Niger and Sudan using a fleet of 2 Bombardier Dash Q400. It was part of Ethiopian airlines "Vision 2025" which is to help African governments establish or re-establish their national carriers and create multiple hubs in Africa. In 2021, the airline had reportedly planned to add an unknown number of Boeing 737-800 to its existing fleet, but this plans never went through. On July 20, 2022, Tchadia Airlines shareholders voted to liquidate the airline due to the consecutive financial losses of 2019, 2020, and 2021 and bleak financial breakthrough in the future. Covid-19 pandemic played a major role in the demise of Tchadia airlines with effects such as having low passenger demand, travel restrictions, economic crisis and many more. The director general of Chad's civil aviation authority in August 2022, mentioned that the demise of the airline was due to mismanagement and government interference. In a TV interview, he said people who were not fit for the positions within the airline were employed, and government officials and their family were utilizing the airline without paying. All these and more built-up overtime and led to the Tchadia airlines' collapse. The director general also mentioned that plans had started for establishing a new national carrier with the hopes that it works out well this time. That would be Chad's fourth attempt at having a national carrier ;(Ch-aviation 2022a; Ch-aviation 2022; Ch-Aviation 2022; CAPA 2022).

6.2 Category 2: Airlines that operated for between six and ten years

This category are airlines that were founded, operated, and collapsed within the time frame of six to ten years. There were 32 airlines in this category. Based on the availability of quality data, ten of these were selected.

11. Ghana International airlines (GIA) was the national carrier of Ghana established in 2004 but started operations in 2005 with its base at the Accra Kotoka International Airport in Ghana. The airline began as a joint venture between the Ghanian government which had 70% shares and a group of private international partners namely Sentry Financial Corporation which had 30% of GIA shares and traded as GIA-USA and had J. Ralph Atkin, (founder of SkyWest airlines) as its chairman. The airline began with daily flights from Accra to London Gatwick and later extended routes to Düsseldorf Airport in Germany, and OR Tambo International Airport in South Africa using 5 Boeing 757 and 1 Boeing 757-200 in 2006 along with 160 employees. On 14th May 2010, GIA passengers all around its destination were left stranded as the airline ceased operations amid its financial collapse and negotiations to hire a private aircraft to transport the passenger proved futile. The financial collapse was a result of the ongoing clash between the Ghanian government and GIA-USA, which started few months after the airline kicked off. The clash was intense to the extent that GIA-USA sued the Ghanian government in 2006. The Ghanian government at the start of the conflict, started looking for alternative partners for the airline, but the management of the airline yielded to the GIA-USA which led to the government dismissing them. As things developed, the Ghanian government withdrew its support from GIA which meant the airline had lost its largest shareholder and hence a collapse was almost inevitable. (Amankwah-Amoah 2014a)summarised the internal reasons for the airlines' collapse as clash between investors, difficulty obtaining slots at lucrative airports, over reliance on state's resources, and government bureaucracy. In summary, GIA was mismanaged by its owners which is unfortunately a reoccurring theme with Ghanian state-owned airlines which should be considered as there are plans to start another national carrier (Aerotransport s.a.; Airlines infocare s.a.; CAPA 2010; Planespotters s.a.).

12. Air Uganda was an airline founded in 2011 with support from the Aga Khan Fund for Economic Development, with its base at the Entebbe International Airport in Uganda. It operated using three CRJ200s and 1 MD-87 on routes in central and eastern Africa to destinations such as Nairobi Jomo Kenyatta, Dar es Salaam, Bujumbura, Kigali, Mogadishu, Kilimanjaro, Mombasa, and Juba. In June 2014, Ugandan Civil Aviation Authority (UCAA) suspended the AOC of all Ugandan airlines that flew international destinations, and Air Uganda was one of the airlines affected. The UCAA took this step after an ICAO's inspection exposed obvious irregularities in UCAA's standard procedures and following of

accepted standard global aviation practices. This was meant to be temporary as these airlines who had their AOC suspended after the UCAA went through recertification and resume operations. Air Uganda was not to pleased with this development as they argued that they had followed all standard procedures and it was the fault of UCAA as it was the ones who did not follow the standard practices and now Air Uganda was facing daily extensive financial loss and brand name damage. As a result of the suspension, Air Uganda returned all its leased aircraft back to the owners, and in October 2014, the board of Air Uganda voted to cease operations totally. The board citied that the whole suspension fiasco and recertification process UCAA had made them undergo had resulted in huge financial loss. Also, the governments' decision to offer one of their strategic routes to Ethiopian airways and Kenyan airways had added more to their financial and reputational damage (CAPA s.a.d; Ch-aviation 2014b; Ch-aviation 2014c; Ch-aviation 2014d).

13. Air Mali is one of the several failed attempts of Mali to establish a national carrier, it was founded in 2005 by Aga Khan Fund for Economic Development (AKFED) the government of Mali. It had its base at the Modibo Keita International Airport in Mali and started out as Compagnie Aerienne du Mali (CAM) then changed its name to Air Mali in 2009, it operated domestic, regional, and international routes using CRJ200 TZ-RCA aircraft. Unfortunately, in 2012 a civil war in Mali broke out and Air Mali had to cease all operations. After the civil war, the airline did not make a comeback. It is important to note that there was another Air Mali founded in 1993 but shut down in 2003 due to bankruptcy and currently there is a privately owned carrier in Mali named Sky Mali that operates domestically in Mali (CAPA s.a.e; Ch-aviation 2012a).

14. Starbow Airlines was a privately owned domestic regional airlines founded in 2011 with its base at the Accra Kotoka International Airport. It operated on routes from Accra to Kumasi, Takoradi, and Tumale using a leased ARJ-100 from Falko Regional Aircraft, and in November 2017 the airline confirmed it would add to its fleet a leased ATR72-500 aircraft from Nordic Aviation Capital and other aircrafts. On Saturday, November 25, 2017, the airlines' newly acquired ARJ-100 was involved in an accident at the Accra Kotoka airport where it was to operate a flight from Accra to Kumasi. Fortunately, all 63 passengers and 5 crew survived the crash with some sustaining injuries. Immediately after this accident, the airline ceased operations temporarily stating that it wanted to cooperate with the civil aviation authority's investigation. After some weeks Ghana's Ministry of Aviation published their Accident Investigation Board which stated that the causal factors of the accident were the loss of situational alertness on the part of the cockpit crew, which led to aircraft's diversion and failure by the crew to execute the right process in stopping the take-

off. Few days following the accident, Starbow airlines started laying off staffs and distributing its aircraft and hence ceased operations leaving AWA airlines the only one operating domestically in Ghana as at that time. It is not certain that the airline closed down solely because of the accident, or the accident combined with financial strains. However, in 2018, there were talks of Starbow making a comeback but there is yet to be any sign of that (CAPA s.a.f; ch-aviation 2017a; ch-aviation 2017b; Kaminski-Morrow 2017; Hradecky 2017).

15. JetLink Express was a Kenyan airline established in 2004, based at the Jomo Kenyatta International Airport, Kenya. It had a fleet of 3 CRJ100s, 4 CRJ200s and a single Fokker 28-4000 on routes from Nairobi to Eldoret, Juba, Kisumu, Mogadishu, and Mombasa. In November 2012, JetLink suspended all operations in what seemed to be a temporary move due to a financial crisis within the company. Unfortunately, this was the beginning of the demise of JetLink. The managing director of the airline stated that the "temporary" closure was because of the inability to repatriate its funds from South Sudan which was facing a serious foreign and local currency emergency. This was a huge problem for JetLink because their Nairobi-Juba (South Sudan's capital) was probably the most profitable route for them as they were the first airline to start the route and so inability to repatriate its funds lead to a loss of a huge financial crisis. With no major funds, JetLink was unable to service its debt and soon after its creditors (such as Aerotech Ltd, Kenol-Kobil, Avmax Spares East Africa and Finejet) began to sue the airline. JetLink tried numerous means to raise funds, but it did not work. In 2015 and 2016, there was a ray of sunshine for the airline, and it renewed its air service license. However, that ray vanished when in 2016, Kenya's high court ruled that JetLink should liquidate and wind up its assets. The court argued that JetLink had had numerous opportunities to pay off its debt but refused to. That was how JetLink ceased existing (CAPA s.a.g; Ch-aviation 2012b; Anami s.a.).

16. Afric Aviation was a Gabon airline that started out as a charter airline in 2009 then expanded to scheduled passenger services in 2010 with their hub at the Port Gentil International Airport, Gabon. The airline operated domestically to Libreville, Franceville/Mvengue, Oyem, Port Gentil, and Gamba and internationally to São Tome and Principe using the ATR72-212. In 2015, a shareholder of the company levelled allegations of embezzlement against the CEO. This led to the latter's imprisonment, and the complainant became the general manager of the company. In May 2017, the airline ceased operations due to financial difficulties which stemmed from delayed paid invoices from customers and the national economic and financial crisis affecting the country, the grounding of its aircraft and termination of leasing contracts. The airline planned for the ceasing of operations to

be temporary and even retained a skeleton employee to help revamp and recertify the airline while management would try to find willing investors. The plan during suspension of operations was to find new investors, boost capital, recertify and acquire a new aircraft. However, this plan did not work as the airline ceased completely (CAPA s.a.h; Ch-aviation 2017; Ch-Aviation 2015b).

17. Senegal Airlines started out as a privately owned airline but later became a joint venture between the Senegalese government (who had 36%) and local shareholders - Groupement National des Privés du Sénégal, Fédération des Assureurs du Sénégal and Groupements de Prestataires Aéroportuaires- (who had 64%) Thus it became the successor of the dead Air Sénégal International. It was established in 2009 and operated domestically using A320-200s until in 2014 when it had to downsize due to financial instability. The airline claimed that the reason for the financial crisis was because the airline was massively under-funded and rising competition in West African's regional market. Despite financial difficulty which had made the airline depend on the Senegalese government for support, the airline refused to declare bankruptcy stating that finding a creditor was the solution to the ongoing difficulty. Unfortunately, that creditor was never found, and the airline only incurred more debt, until finally in 2016, the Senegalese Ministry of Transport removed the airline's status as 'flag-carrier' stating that the airline had not fulfilled the instructions on which the agreement was built. The airline which was soiled in debt had to reduce its fleet from A320-200s to an E120 and an E145 wet-leased from Transair. Even with this, the airline strived to continue operations but failed (Ch-aviation 2016; Ch-aviation 2012c; Ch-aviation 2013; Ch-aviation 2014e).

18. Dasab airline was founded in 2001 with its base at the Nnamdi Azikiwe International in Abuja, Nigeria (ABV) and operated domestic flights between Abuja and Lagos using 2 Boeing 727-200. It was privately owned by a Nigerian businessman and had its official launch flight on December 28, 2003, although it had commenced services before then. In January 2007, the Nigerian civil aviation authority (NCAA) announced a new capital prerequisite to all domestic airlines, giving them until April 2007 to meet the pre-requisite. This new capital pre-requisite was for airlines to increase their capital by 25% or lose their AOC. This move by the NCAA was to remove inadequately funded airlines which usually used old aircraft and cost-cutting practices to operate. Out of the 20 airlines given this condition, 13 met with the new capital specification while seven of them did not. Dasab airline, Albarka air and Fresh air were among the 7 airlines that did not meet the capital requirement and so their AOC was revoked (Ch-aviation s.a.a; Ndubuisi 2004; Reuters 2007; Vanguard 2022).

19. Fresh air (Nigeria), founded in 1999 was a passenger and cargo airline that operated several aviation services between Lagos, Luanda, Dubaio, Kano, and Port-Harcourt using 2 Boeing 737-200 and 1 DC-9-30. The aviation services included trader flights, aerial photography flights, charter groups, mail, and document delivery. Fresh Air was among the seven Nigerian airlines whose AOC was withdrawn because they that could not meet the 2007 recapitalization target imposed by the NCAA (Lagosinfo s.a.; Ch-aviation s.a.b; Vanguard 2022; Reuters 2021).

20. Albarka air was founded in 1999 as a joint venture between a businessman (who owned 51%) and other partners (who owned 49%). The airline was based at the Nnamdi Azikiwe International airport in Abuja, Nigeria and operated flights to Lagos, Maiduguri and Yola using 4 Boeing 727-200 and 1 Boeing 737-200. (Bello; Ch-aviation). Albarka Air was among the seven Nigerian airlines whose AOC was revoked because they that could not meet the 2007 recapitalization target imposed by the NCAA (Ch-aviation s.a.c; Reuters 2007; Vanguard 2022).

6.3 Category 3: Airlines that existed between 11 and 20 years.

This category are airlines that were founded, operated, and collapsed within the time frame of 11-20 years. There were 25 airlines in this category (see appendix y), and 5 airlines based on the availability of quality data were selected.

21. IRS Airlines was a privately owned Nigerian airline founded in 2002 and based at Nnamdi Azikiwe International Airport, Abuja. It also had an operational base at the Murtala Muhammed Airport in Lagos. It operated routes on Abuja, Gombe, Kaduna, Lagos, Maiduguri, Yola, and Port Harcourt, with a fleet of five Fokker 100 and 1 Fokker F28 Mk4000 as of 2010. In November 2013, IRS airlines had their fleet grounded by the Nigerian Civil Aviation Authority (NCAA) due to some events involving the airlines: there had been problems with its aircraft's hydraulics. Nigerian aviation law allows only airlines with at least 3 serviceable and fit aircraft to operate passenger scheduled services and although IRS airlines had several aircraft, it was unsure whether all of them were operatable. IRS airlines improved their fleet and had plans to resume scheduled passenger operations when unfortunately, there was an accident involving one of its Fokker 100s. Ironically, this aircraft was returning from a maintenance check from Bratislava when it crashed landed at a village in Niger Republic. IRS airlines already had three of its aircrafts stowed. This means the accident with the aircraft meant it did not have enough aircraft to operate its services. After the crash, IRS airlines remained in suspension and there were numerous issues, bu-

reaucracy and delay with the accident investigation and the airline kept adding up debt until it was never able to return to operations (CAPA s.a.i; Oyewale 2014b; Ch-aviation 2013b; Travels 2010; Ch-aviation 2014f).

22. Antrak airline was a big name in the West African region during its years of operations. It was founded in 2003 and was fully owned by Ghanian investors. It had its base at the Accra Kotoka International Airport in Ghana and operated domestic daily from Accra to Kumasi, Sunyani, Tamale and Takoradi using 2 ATR 72-500. In 2013, one of Antrak leased aircraft had a fire outbreak in its engine. The aircraft, which was going from Tamale to Accra, had been wet leased from Swift Air who covered the insurance. In 2015, the airline started to make plans to commence flights to the UK, Germany, South Africa, Saudi Arabia, UAE and Lebanon after it had received the right to operate in these countries. However, the airline did not start operations as it was waiting for the delivery of its aircraft. That same year (2015), there was some issue with the wet leasing contract between Antrak Air and Swift Air. This issue was serious to the extent that Antrak Air had to cease its operations for a supposed 3 months. Within the supposed 3 months cease, Antrak air looked to restructure and twitch its business model to fit the business environment and to dry lease aircraft for its operations which would give greater autonomy to the airline. Unfortunately, these 3 months suspension got extended indefinitely until Antra Airline was no more being heard about (CAPA s.a.j; modern ghana 2015; Williams & Boah-Mensah 2013).

23. Marsland Aviation, founded in 2001, was a privately owned Sudanese airline with its base at the Khartoum International Airport. It used 4 leased Boeing 737 and operating domestically within Sudan and regionally to South Sudan, Egypt and Kenya. In November 2013, the airline had to suspend all operations amid financial difficulties caused by the sanctions placed on Sudan by the US government. The US had placed several sanctions on Sudan which hiked prices, reduced foreign exchange availability and negatively affected government and private businesses. These sanctions greatly affected the airline due to numerous reasons such as the government's move to slash fuel subsidies and narrow foreign currency remittance policies, as well as increase in price and operational fee within the country. Also, the airline had changed its fleet from Russian aircraft to US Boeings because of its good fuel consumption and economic reliability. Unfortunately, maintenance issue and lack of spare parts were other problems that came with Boeing. The sanctions meant that Marsland's leased aircraft could not be registered in Sudan and had to be registered in Gambia and Georgia which incurred double costs. Marsland Aviation was not alone in this ordeal as 9 local airlines had to cease operations because of the

sanctions. Now, years after the sanctions, Marsland aviation is yet to recover (CAPA s.a.k; Radio Dabanga 2013; Shago 2013; Ch-aviation 2013c).

24. Sosoliso airline was a Nigerian privately owned airline that was founded in 1994 and was based in the Akanu Ibiam International Airport (Enugu) in Nigeria before later moving its headquarters to Lagos. It operated only domestic flights to Abuja, Lagos, Enugu, Port Harcourt and Owerri using a fleet of 4 McDonnell Douglas DC-9 and 2 McDonnell Douglas MD-80. The airline is famously known for a tragic accident involving one its DC-9-32 in 2005 flying between Port Harcourt and Abuja. The sad event left 108 people dead and only two survivors. The fatal accident led the then president to suspend Sosoliso's operations until investigations were completed and things could be resolved. However, leading up to this and other aviation incidents in Nigeria, prompted the NCAA to introduce new policies and one of the policies was the 25% increase in capital for airlines (as discussed in the previous sub chapter). Unfortunately, Sosoliso airlines did not meet up with this demand and in 2006 they ceased operations, a year after its fatal accident (Planespotters s.a.b; Oyeniyi 2022; Simwa 2016; NewsWireNGR 2022).

25. Nationwide airline was a South African airline that was based at the OR Tambo International Airport operating majorly domestic flights and an international flight to London Gatwick with its fleet of 20 Boeing aircraft. It was a full-service carrier that adjusted its business model towards the LCC model by changing some of its services such as stopping the sale of free meals. However, it never advertised itself as an LCC. In November 2007, just in time for the Christmas season, Nationwide was grounded when South Africa's Civil Aviation Authority (CAA) revoked its aviation maintenance organisation licence, which did not meet the CAA's safety standards. The airworthiness certificates of all its aircraft were also suspended. Earlier that month, one of its aircraft was involved in an accident when its engine fell off. However, the CAA said that the airline's license was not revoked because of this accident. It was gathered that Nationwide had reduced the quality of their aircraft maintenance by using wrong spare parts for its aircrafts, although Nationwide argued that its airline was just being targeted by the government. As time went on, Nationwide was not able to have its certificates reinstated and had to cease operations. Even after the airline ceased operations and was liquidated, it sued South African Airways (SAA) to court based on breach of South Africa's Competitive Act which negatively impacted Nationwide airlines finances. In 2016, the court ruled in favour of nationwide and asked SAA to pay a certain amount to Nationwide, the court also acknowledged Nationwide's bad safety records (southafrica.to 2007a; southafrica.to 2007b; southafrica.to 2007c; Ch-aviation 2016b).

6.4 Category 4: Airlines that existed for over 21 years or more

This category are airlines that were founded, operated, and collapsed after operating for 21 years and above. There were 19 airlines in this category (see appendix y), and **six** airlines based on the availability of quality data were selected.

26. Air Namibia founded in 1991 was the national carrier of Namibia and was wholly owned by the Namibian government and had its base at the Windhoek Hosea Kutako International Airport. It flew both scheduled passenger and freights routes to destinations in Africa and Europe using a fleet of four leased Airbus 319-100s and one B737-500. On February 11, 2021 the airline ceased all operations as it voluntarily filed for liquidation with the Namibia's Windhoek High Court granting a provisional order for its liquidation. Air Namibia was swimming in debts and had survived over the years due to government bailout. However, with the hit of the pandemic, Namibia's economy could no longer keep handing out bailouts to the airline. The government considered other alternatives such as investments from other airlines, business rescue, restructuring and so on but decided it was best to liquidate the airline. It was claimed that the cause of this massive debts was due to Air Namibia's high operating costs, and small fleet size, and things worsen when the airline had to halt operations at the beginning of the pandemic. There were also many costly decisions that Air Namibia made such as faulty and unsuccessful leasing contacts that costs the airline millions of dollars per month. The latest news about the airline is that there were several efforts by many other companies such as BDS Airways to acquire Air Namibia after its liquidation (Kato 2021; Ch-aviation 2022c; Ch-aviation 2021; Reuters 2021).

27. Cameroon airlines founded in 1971 was the national carrier of Cameroon, with its base at the Douala International Airport. It was owned by the government of Cameroon (75%) and Air France (25%). The airline was formed after Cameroon exited Air Afrique (an airline formed by former French colonies in west and central African) and started its operations on a Boeing 707-320B, and later expanded its fleet to include 3 Douglas DC-4, 1 Convair 440, 1 Boeing 737 and many others. The airline used the fleet to destinations such as Burundi, Nigeria, Ivory Coast, Kenya, and Gabon. Agreements were also made with British Caledonian Airways which granted the European airline permission to operate the Douala-London route. The airline eventually started operating European routes such as Geneva, Rome, London and so on. In 2003, Cameroon airlines suspended its operations between June and November, then in 2005, the airline was banned from flying to Paris. As time progressed the airline was faced with more and more challenges. It tried to save itself by getting funds from Brussel airlines, but that did not work and in 2008, the airline went bankrupt. (Amankwah-Amoah & Zhang 2015), summarised the causes of

Cameroon airline's demise into internal factors such as poor customer service and poor safety record, and external factors such as changes in the business environment, competition, and 9/11 attack effects on the aviation industry (Guttery 1998; Hardiman 2022; Ch-Aviation 2022).

28. Lina Congo founded in 1965 was the replacement of the privately owned Air Congo, and was owned by the government (66%) and other private investors, it was first named Air Congo then Air Zaïre before finally becoming Lina Congo. It operated passenger, freight and charter services with its main routes being Brazzaville to Loubomo and Brazzaville to Pointe-Noire and other routes were Rousset, Dolisie, Impfondo, and Jacob. It started these operations using several Douglas and Fokker planes, and its fleet and destinations expanded as the airline grew and more funds were added. Lina Congo benefited a lot from governmental and external funds from European Economic Community, Canadian banks, French Ministry of Cooperation and Arab banks. As years passed, the funds coming in reduced and the airline was beginning to be regarded as a 'burnt out' and massively in-debt airline. In 2002, Lina-Congo finally ceased operations when the government decided to stop funding it and had it closed. In 2015, it was liquidated. It is agreed among many that Lina Congo had experienced the same fate as its predecessor (Air Congo) such as incurring massive debts due to mismanagement. (Guttery 1998; Clark & Decalo 2012; Ch-Aviation 2022)

29. Nigerian Airways was a full-service carrier founded in 1971 with its base at the Lagos Murtala Muhammad airport in Nigeria; it was wholly owned by the Nigerian government. The airline was formed from West African Airways Corporation (WAAC), which the Nigerian government owned 51% then later bought 100% of before changing its name to Nigerian Airways. It's destinations included Dakar, Ghana, Frankfurt, London, Madrid and Rome using a fleet of 1 Aztec, 1 DC-3 and 6 Fokker Fz7s. At some point in its existence, the airline was one of the largest in Africa and the largest in West Africa, operating about 40% of international flights out of Nigeria and 90% of domestic flights in Nigeria. It was also the first African airline to get slots at any airport in the United States. The demise of Nigerian airways is a tragic story involving series of long-term bribery, assets stealing and fraudulent activities. As the airline aged, its assets started dwindling and by 2003, it had only one serviceable aircraft. Yet the airline was still overstaffed and by this time, it was in a financial crisis. At this stage, the Nigerian government decided to shut down the airline as it could not bear its burdens anymore. (Adeoye 2022) summarises the causes of Air Nigeria demise as due to massive debt incurred, mismanagement and intense corruption (Businessday NG 2015; Adeoye 2022; Ogbeidi 2006; Ch-Aviation 2022).

30. Ghana Airways founded in1958 by the Ghanian government was the national carrier of the airport with the government owning 60% and a private investor owning 40%. This later changed as the government went on to fully own the company. It had its base at the Kotoka International airport, in Accra and started operations with a Havilland Heron aircraft to destinations within Ghana, in South Africa, UAE, USA, London and so on. Ghana airways' problems started becoming obvious when passengers were being left behind due to the airline's mismanagement and misinformation. This led passengers to threaten the airline and even go as far as holding one of the airline's pilot hostage. This was just the beginning of Ghana airways' struggles. In 2002, one of the airline's aircraft was legally forcefully taken by one the airline's creditors, an incident that opened the can of worms of the airline's debt. In 2004, the airline was banned from the USA by the US government due to the unfit aircrafts and expired licenses used by the airline. As the airline was saddled in more debt and trying to restructure its business model, the Ghanaian government could not keep on pumping money into the airline which led the government to shut the airline in 2004. Since then there has been several attempts at reviving the airline such as in 2010, when there was a proposed plan between the Ghanian government and Arik Air (a Nigerian airline). This plan and several others have not worked out (Finlay 2021; Ghana-Net website s.a.; ch-aviation 2014).

31. Air Afrique is probably one of the biggest airlines in Africa's history and was founded in 1961 by 11 former French colonies in Africa and supported by Air France and Union Aéromaritime de Transport (UAT) each having 17% of the airline. It started operations with 12 DC-4s and was flying between its member states and internationally as well. As the airline expanded, the management sought to pursue independence and purchased the airline stakes from Air France and UAT. With only member states owning the airline, politics set in in the running and managing of the airline such as deciding routes to be operated, employment, leadership positions and so on. The effect of political influence on the airline began to show when the airline was neck deep in debt due to high fuel prices, low passenger number and high cost of leasing contracts. At the beginning of the 1990s, the airline member states reached out to France for help, and although France sent an official to manage the airline, the situation could not really be rectified. The last straw that broke the camel's back was the 9/11 attack and in February of 2002, the airline became insolvent. (Amankwah-Amoah & Debrah 2014; Pande 2022; Ch-Aviation 2022)

7 Results

This chapter presents the findings of the research combining both qualitative and quantitative data. The discussion here is structured in line with the thesis research questions. The secondary qualitative data which is the bulk of the data would be analysed first then the primary quantitative data would be analysed.

7.1 Qualitative Data analysis

As described in the data chapter, 169 African airlines have closed within the last 20 years and 31 of those airlines were analysed to find the reason they collapsed. From the list of 169 airlines (Appendix 2), some observations can be made across the synoptic stories of the airlines. Although the synopsis was done qualitatively, presenting our observations across the synopses in numerical terms was considered helpful.

Age at collapse: Most airlines (48%) collapsed when they were under the age of five.
Ownership*:* Most of the airlines were privately owned airlines with small operational sizes.
Location: The airlines were scattered across Africa with a concentration in West Africa region in Africa.

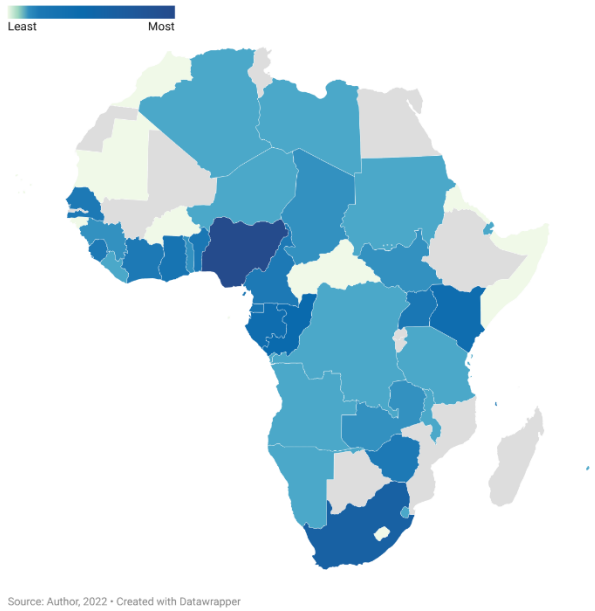

Figure 7. Locations of the airlines from the population data. (Source: Author)

Business model: Most of the airline that closed had the Full-Service Network business model. Out of the population data (that is 169 airlines), the business model of 92 airlines was found while the business model of the remaining 77 airlines were not found. From these 92 airlines, 45 of them were FSC, 30 were LCC and 17 were regional (Figure 8) and

from the sample data (that is the 31-airline analysed), 15 airlines were FSC, 9 were LCC and 7 were regional (Figure 9).

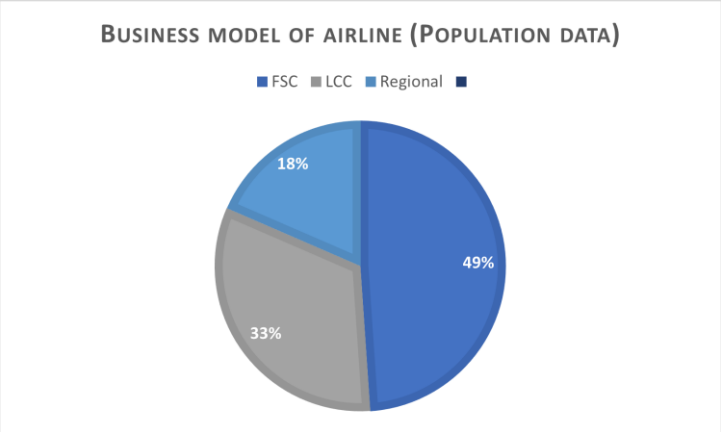

Figure 8. Business model of airline (Population data) (Source: Author)

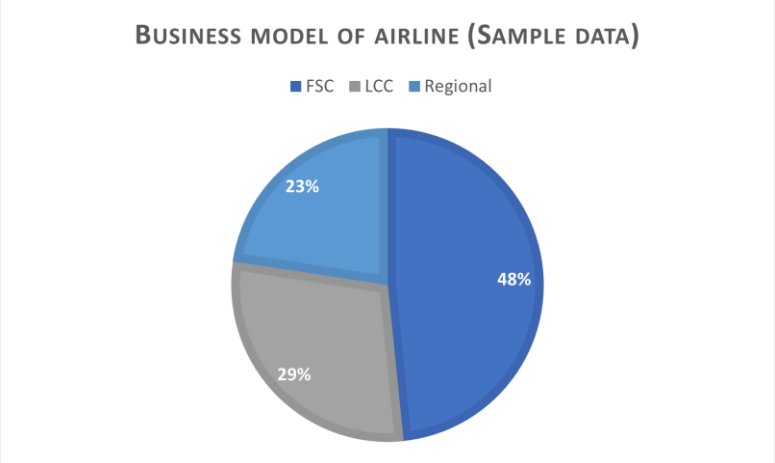

Figure 9. Business model of airline (Sample data) (Source: Author)

The table below presents a summary of the analysed airlines. As explained in the theoretical framework subchapter, the causes of closure for the airlines were grouped into internal or external factors using the Marketing mix and PESTEL analysis.

Airline	Age	Business model	Reason for collapse	Category: 7P/PESTEL	Category: internal/external
Eagle Atlantic airline	1	FSC	no aircraft available	7P: Process	Internal
Discovery Air	2	FSC	AOC revoked due to cost-cutting practices	7P: Process	Internal
Tchadia airlines	4	FSC	mismanagement and government interference	7P: People	Internal
Ghana International airlines	6	FSC	mismanagement and government interference	7P: People	Internal
Air Uganda	7	FSC	Ugandan Civil Aviation Authority did not meet ICAO's standard and revoked local airline's licenses	PESTEL: Political	External
Air Mali	10	FSC	Civil war	PESTEL: Political	External
JetLink Express	8	FSC	inabiltiy to repatriate funds due to economic crisis in Uganda	PESTEL: Economic	External
Senegal airlines	7	FSC	Under-funded and competition	7P: Process. PESTEL: Economic	Internal/External
Nationwide airline	17	FSC	AOC revoked due to unfit aircraft and questionable maintenace	7P: Process	Internal
Air Namibia	30	FSC	high operating cost, small fleet size, pandemic	7p: Process PESTEL: Political	Internal/External
Cameroon airlines	37	FSC	poor customer service and poor safety record, 9/11 and competition	7P: People & Process. PESTEL: Political	Internal/External
Lina Congo	37	FSC	mismanagement and government interference	7P: People	Internal
Nigerian Airways	33	FSC	mismanagement, corruption and government interference	7P: People	Internal
Ghana Airways	46	FSC	mismanagement and government interference	7P: People	Internal
Air Afrique	41	FSC	political and government interference, gross mismanagement	7P: People	Internal
Southeast airline	1	LCC	high operating cost, competition	7P: Process. PESTEL: Economic	Internal/External
Flyafrica Namibia	1	LCC	AOC was revoked due to ineligible aircraft	7P: Process.	Internal
Fresh air (Zimbabwe)	1	LCC	It's parent airline went bankrupt	PESTEL: Economic	External
Santaco airline	1	LCC	unqualified professionals at the airline	7P: People	Internal
Dasab airline	6	LCC	Unable to meet new capital requirement	7P: Process. PESTEL:Political	Internal/External
Fresh air (Nigeria)	8	LCC	Unable to meet new capital requirement	7P: Process. PESTEL:Political	Internal/External
Albarka air	8	LCC	Unable to meet new capital requirement	7P: Process. PESTEL:Political	Internal/External
IRS airline	11	LCC	Insufficient operable aircraft	7P: Process	Internal
Sosoliso airline	12	LCC	Unable to meet new capital requirement	7P: Process. PESTEL:Political	Internal
South Supreme Airlines	2	Regional	fatal aircraft accident	7P: Product	Internal
Fly Blue Crane	3	Regional	empty flights, competitions, bankruptcy	7P: Promotion.PESTEL: Economic	Internal/External
Punto Azul	3	Regional	AOC revoked due to not meeting ICAO standard reyuirement	7P: Process	Internal
Starbow airlines	6	Regional	Aircraft accident which led to financial constraint	7P:Process	Internal
Afric Aviation	8	Regional	delayed paid invoices, national economic crisis	PESTEL: Economic	External
Antrak airline	12	Regional	Aircraft leasing contract issue	7P:Process	Internal
Marsland aviation	12	Regional	financial difficulties due to US sanctions on Sudan	PESTEL: Politcal	External

Source: Author, 2022 • Created with Datawrapper

Figure 10. Summary of airline analysis (Source: Author)

From the 31 airlines analysed, 10 operated for 5 years and below, 10 operated for 6-10 years, 5 operated from 11-20 years and 6 operated for above 21 years. Seven of the airlines were Low-Cost Carrier, 15 were FSC, and 7 were regional airlines. This distribution reflects the entire airline population used in this study.

The most common reasons for collapse among the airlines analysed were one form of mismanagement or the other, and government interference (which is an internal factor as in most cases, the government usually owned the airlines). Twenty airlines out of 31 (64%) collapsed due to some form of mismanagement within the company, some of the forms include use of unfit aircraft, not meeting standard requirements, unqualified staffs, political control, and interference in the affairs of the company.

As the causes of the airline closure was categorised into either Marketing Mix (internal) or PESTEL (external), 54% fell under Marketing mix, 19% fell under PESTEL, 28% fell under both Marketing mix and PESTEL. The most causes fell under Marketing mix which made sense as the common reason for closure is mismanagement which is an internal factor. Under marketing mix the most common factor was “Process”, which is all the behind-the-scenes decision and activities that an airline engages in to produce its product or service. Fifteen airlines (48%) were categorised under the marketing mix of "Process" as the reason for their collapse, 7 airlines (22%) were categorised under “People”, 1 airline (3%) fell under “Product” and 1 airline (3%) fell “Promotion”. For the PESTEL factors, 9 airlines (29%) wholly or partly collapsed due to political factors and 6 airlines (19%) wholly or partly collapsed due to Economic factors. These were the only PESTEL factors in the analysis as the remaining 16 airlines (51%) did not collapse wholly or partly due to external factors.

Any airline cause of failure that falls under the marketing mix is a microenvironment (that is internal factors) while under PESTEL is macroenvironment (which means external factors). Seventeen airlines (54%) collapsed due to internal factors, 6 airlines (19%) collapsed due to external factors and 8 airlines (27%) collapsed due to a combination of internal and external factors.

7.2 Quantitative data analysis

Using questionnaire instrument, the study involved a survey of aviation workers and experts to identify their opinions on the external and internal factors that contribute to the fall of African airlines. The survey had 32 respondents across various African countries. This section analysed the data from the questionnaire using descriptive statistical methods such as percentages, charts, and tables.

7.2.1 Age group of respondents

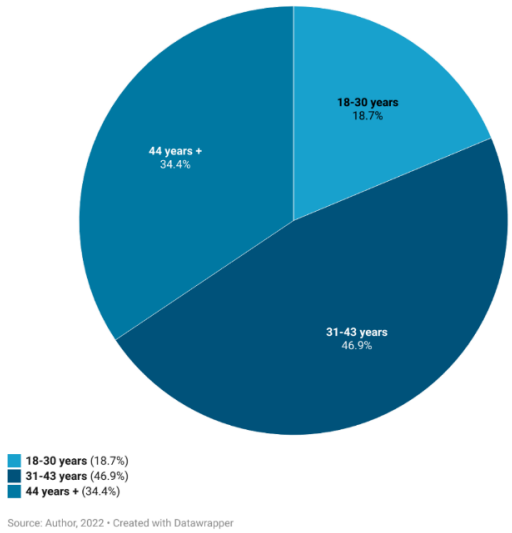

Figure 11. Age range of respondents (Source: Author)

The pie chart above shows the age group of respondents in the survey. From the analysis, 18.7% of the respondents were between the age group of 18 to 30 years. The next age group were 31 to 43 years which made much of the respondents, specifically 46.9%. Finally, 34.4% of the respondents were aged 44 years and above.

7.2.2 Sex of respondents

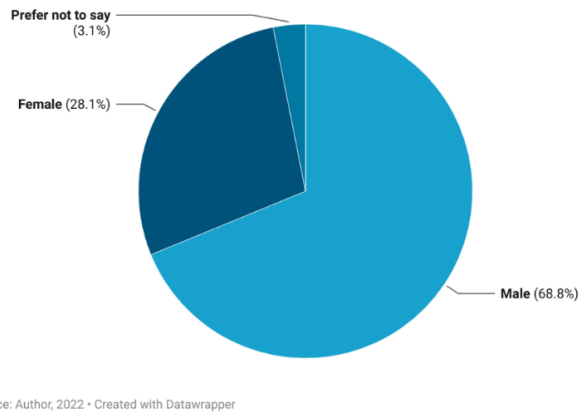

Figure 12. Sex of respondents (Source: Author)

The chart above demonstrates the sex of respondents of the survey. In the survey, 68.8% of the respondents identified as male. Female respondents were 28.1% while 3.1% preferred not to disclose their sex. From the analysis, male respondents constituted most of the study.

7.2.3 Aviation sector

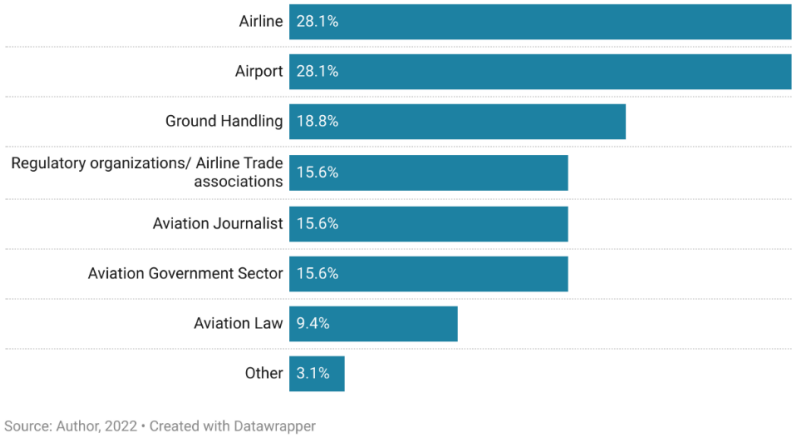

Figure 13. Aviation sector of respondents (Source: Author)

The bar chart above reveals the aviation sectors of the respondents. As mentioned, the respondents of the sector were experts and workers in the African aviation industry. From the analysis, the airline and airport sector produced equal number of respondents, specifically 28.1%. Following that is respondents who worked in the ground handling sector, and they made up 18.8% of the sector. The next two sectors namely regulatory organization and aviation journalism constituted equal number of the survey, specifically, 15.6% of the respondents. In the survey also, 9.4% of the respondents were from aviation law. Finally, 3.1% of respondents indicated that they worked in a different sector other than the ones listed in the questionnaire. This sector was air navigation.

7.2.4 Work experience

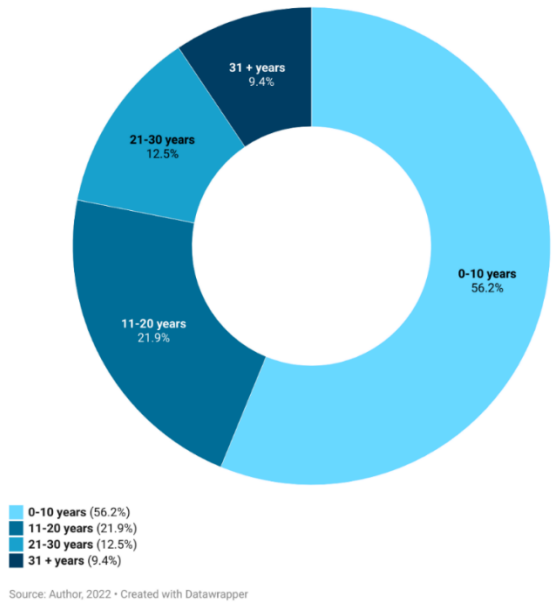

Figure 14. Respondents years of work experience (Source: Author)

The survey also analysed the years of experience of the respondents into four categories as represented in the chart above. Most of the respondents, specifically 56.2% had 0 to 10 years aviation working experience. Following that is 21.9% of respondents who had 11 to 20 years working experience in the African aviation industry. Also, 12.5% of the respondents revealed they had 21 to 30 years of work experience in the aviation industry. The least but most experienced were 9.4% which indicated they had over 31 years of experience in the African aviation industry.

7.2.5 External factors

External factors	5	4	3	2	1
African government policies and actions	50.0%	21.9%	25.0%	3.1%	0.0%
Economy (inflation, interest rates…)	43.8%	28.1%	25.0%	3.1%	0.0%
Social factors (customers' demographic, lifestyle)	9.4%	12.5%	46.9%	25.0%	6.2%
Level of technology advancement	21.9%	18.7%	50.0%	6.3%	3.1%
Environmental factors	15.6%	34.4%	25.0%	18.7%	6.3%
Aviation industrial laws and regulations	9.4%	21.9%	25.0%	37.5%	6.2%

Source: Author, 2022 • Created with Datawrapper

Figure 15. Extent of external factors affecting African airlines (Source: Author)

The survey provided six possible external factors that can contribute to the fall of airlines in Africa. As explained in the theoretical framework of the study, the external factors are derived using the PESTEL model which is used to analyse external factors that could influence an organisation. The survey provided a Likert scale of 5 to 1 to specify the extent to which the respondents agreed with these factors. 5 represented most agreed while 1 represented least agreed. The analysis from the survey revealed that half of the respondents (50%) fully agreed that government policies and actions contributed to the fall of airlines in Africa. Following that is economy factors and a little less than half of the respondents, specifically 43.8% fully agreed that the economy of Africa contributed to the fall of its airlines. Moving on, 46.9% of the respondents fairly agreed that social factors contribute to the fall of African airlines. Similarly, 50% of the respondents fairly agreed that technology factors contribute to the fall of African airlines. Next is environmental factors which had

most respondents, specifically 34.4% partially agreed that environmental factors contributed to the fall of African airlines. Finally, 37.5% of the respondents partially disagree that aviation laws contributed to the fall of African airlines.

7.2.6 Internal factors

Internal factors	5	4	3	2	1
Quality of African airline services	25.0%	18.7%	43.8%	9.4%	3.1%
Location and flight destinations	6.2%	9.4%	50.0%	28.1%	6.3%
Brand and marketing of airlines' services	9.4%	31.2%	43.8%	15.6%	0.0%
Employee's performance	25.0%	18.7%	34.4%	12.5%	9.4%
Airline's operations	15.6%	46.9%	25.0%	6.2%	6.3%
Physical appearance (aircraft, website)	6.3%	18.7%	43.8%	28.1%	3.1%
Management failure	46.9%	43.8%	6.2%	3.1%	0.0%
Fleet composition	9.3%	34.4%	46.9%	9.4%	0.0%

Source: Author, 2022 • Created with Datawrapper

Figure 16. Extent of internal factors affecting African airlines (Source: Author)

In addition to external factors are the possibility of internal factors that can contribute to the fall of African airlines. These factors are derived from the 7Ps Marketing Mix model as highlighted in the methodology. As the external factors, the internal factors also provide a scale of 5 to 1 to specify the extent to which the respondents agreed with these factors. 5 represented fully agreed while 1 represented least agreed. From the analysis, most of the respondents, specifically 43.8% fairly agreed that the quality of airline services contribute to the fall of airlines in Africa. Similarly, 50% of the respondents also fairly agreed that the location and flight destinations of airline contribute to their fall. Moving on, 43.8% of the respondents fairly agreed that brand and promotion of airlines contributed to the fall of airlines in Africa. In terms of employee's performance, most of the respondents, specifically 34.4% of the respondents fairly agreed that such factor contributed to the fall of airlines in Africa. Airline operations had quite a different opinion as 46.9% of the respondents partially agreed that it contributed to the fall of African airlines. On the other hand, 43.8% of the respondents fairly agreed that the physical appearance of airlines contributed to the fall of airlines. Most of the respondents, specifically 46.9% fully agreed that management

failure contributed to the fall of airlines in Africa. Finally, 46.9% of the respondents fairly agreed that fleet composition contributed to the fall of African airlines.

7.2.7 Other factors

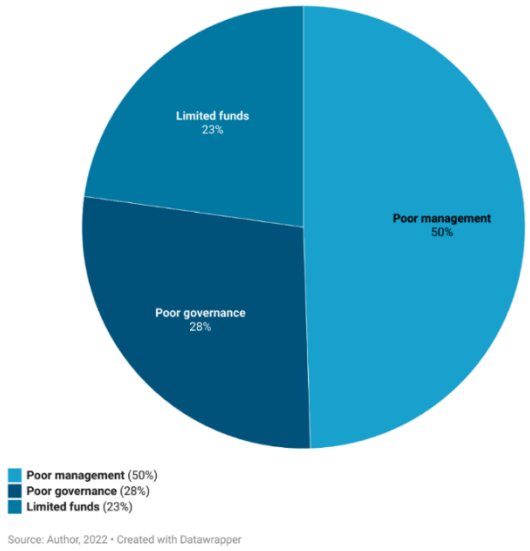

Figure 16. Other factors affecting African airlines (Source: Author)

The survey gave respondents an option to suggest other internal or external factors that could contribute to the fall of African airlines. Their response, however, can be divided into three main themes namely management, government, and funds. Half of the respondents, specifically 50% identified poor management as a factor contributing to the fall of African airlines. Next, 28% of the respondents suggested poor governance as a contribution to the fall of African airlines. Finally, 23% of the respondents noted that limited fund is a contribution to the fall of airlines in Africa.

7.3 Summary of results

The result of this thesis is a combination of qualitative and quantitative data, of which the qualitative data is gotten from archival and document analysis and quantitative data is gotten from a questionnaire.

In the study, the available records of 31 out of 169 defunct African airlines were analysed to find the primary cause of collapse. The airlines were from all business model types and different regions in Africa, regardless of business model and location, airlines are most fragile during their first 5 years and are most likely to fail as 48% of airlines closed between the ages of 0-5 years. The reasons for collapse vary and are unique to each airline

such as competition, high operating costs, aircraft accident, war, sanctions, economic crisis, pandemic and corruption. However, some similarities can be drawn from the causes of airline collapse to make general credible conclusions.

For example, most of the airlines closed due to poor management or gross mismanagement. The macro and micro environmental factors of airline were considered using PESTEL and marketing mix, with the data showing that most airlines closed due to the factors that make up the marketing mix, majority of the airlines (64%) collapsed due to mismanagement, and 54% of airlines' cause of collapse was due to internal factor.

The aim of the questionnaire was to obtain the views of aviation workers and experts on the extent to which internal and external environmental factors contribute to the decline and failure of airlines. In summary, most respondents commenting on external factors, blamed government policies and action for the failure of the airlines. Such actions include interference by government officials as well. Commenting on internal factors, most respondents blamed poor management (including fraud) on the part of the airline management as the reason for the collapse. It is instructive that very few respondents blamed it on workers' competence or training.

8 Discussion

The most important part of a research is to get the answer to the research question. This chapter analyses the results from the data collection to find out if the aim and objective of this research was met. The chapter also discusses the usefulness, limitation, validity and reliability of this research, proposals for further research and a self-evaluation.

8.1 Analysing Thesis Questions

This subchapter analyses and answers the research question and sub questions using the results from the qualitative and quantitative data backed by the literature review.

The main research question is "**What is the major cause to the fall of previously existing African airlines**?" Before this question can be answered, the question of "Is there a pattern to the fall of African airlines" must first be answered and then the question on "what is the pattern" can be answered.

8.1.1 Causes of Airlines Atrophy

Researchers have identified many causes of airline failure in the different studies, as shown in the literature review. The airline analysis and questionnaire also show similar causes of airline failure. A total of 64% of airlines analysed collapsed due to the same reason and from the questionnaire majority of respondents fully agreed on the same factors that contribute to airline's demise. The major factor is mismanagement, from the airline synoptic analysis. From the questionnaire respondents' perspectives, the major factor is also mismanagement and government interference. Even when given open-ended responses, 50% of respondents re-stated poor management. From all of these, it is accurate and credible to conclude that the major reason African airlines collapse is due to the internal factor of mismanagement and external factor of government policy, action, and interference. The foregoing causes do not rule out high operating costs, insufficient resources, and violating/not meeting the standard policies and practices.

8.1.2 Pattern of Airlines Atrophy

There is a discernible pattern in the atrophy of African airlines. First is that most do not survive their first five years.

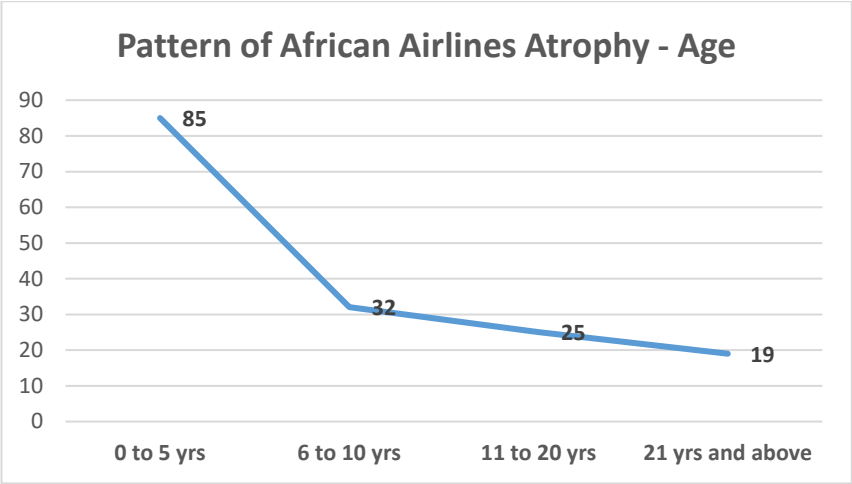

Figure 17. Pattern of African Airlines Atrophy (Source: Author)

The first 5 years are the most critical as those airlines which survive it tend to go on for many more years. From age 6 onwards, the mortality rate appears to slow down. If we may borrow from the health sector, infant and under-five mortality is a major reality in the aviation sector in Africa (Tesema et al 2022). The longer they live, the less likely that would die.

Second, most of them have struggles with the regulatory agencies: unable to meet up with regulatory standards even after spirited efforts, they then cave in. The pattern seems to follow a four-step trajectory: start, hitch, fight back, give in. Nearly all of the 31 analysed synopsis followed this pattern. They did not just disappear when they hit the iceberg. There was fight back, manipulation, promises and hope but none of these prevented the inevitable.

Third, most atrophied airlines (the LCC and Regional airlines) are small businesses and owned by private entrepreneurs. This does not mean that big businesses do not suffer but small ones often lack the elbowroom to withstand big global, continental, and national economic shocks. Some also lack the economic muscle to draw in large capital. With some exceptions, conglomerates and Public–private partnership (PPP) models seem to have a brighter chance of living longer.

Fourth, they are located in different parts of Africa. There is no sub-regional dimension to the pattern of atrophy.

Finally, most of them operate on the FSC business model.

8.1.3 Prevention of Airline Failure in Africa

The third sub question is “What can present, and future African airlines learn from the collapse of other African airlines?” One of the best ways to progress is to learn from the mistakes of others, now that the major reasons for African airline closure have been identified, recommendations based on the results can be made for present and future airlines. As mentioned above, the pattern of collapse of African airlines is majorly mismanagement (64% of airlines analysed), the key takeaway from this is that African airlines need to pay more attention and resources into the management of their airlines.

Decision makers in African airline need to be equip and frequently updated with the skills needed to operate a profitable airline in the African aviation industry. Qualified personnels alone should be employed without the interference of any discriminating factors such as politics, gender, or race. Once qualified and skilled personnel are in the driver’s seat of the airline, they should be given the resources needed to make the right decisions with unnecessary interference by investors and/or government (if the airline is government owned). Decision makers at airlines should also be ready to adapt the airlines to fit the changing aviation environment in Africa, this could be in the form of restructuring business models, changing fleets, expanding, or shrinking flight routes and operations. Finally, there must be a business risk plan in every airline that can be launched before or when the decline of an airline begins, this is very important as early-detection of decline if neglected often leads to the demise of the airline. (Amankwah-Amoah & Zhang 2015; Amankwah-Amoah & Debrah 2014; Amankwah-Amoah 2014b; Ssamula 2009)

8.2 Result Discussion

A huge part of global development is due to the aviation industry which has made distance no longer a barrier because of the services it offers, and this makes the industry very dynamic (Belobaba 2016). The African aviation industry is growing at a rapid rate but unfortunately this growth does not mean the industry is hale and hearty. For example, the African airline industry is saddled with low seat capacity, low load factor, low interconnectivity, and struggling airlines (Bofinger 2017). These unfortunate characteristics of African aviation industry are due to bad regulatory structure, bad/lack of infrastructure, unskilled labour, high operating costs and so on (Meichsner & al. 2018). There have been several efforts to create a better African aviation industry such as creating associations among African airlines to build cooperation and pushing for more air liberalisation (like the Yamoussoukro Decision) (Gleeve 2014; Abeyratne 1998).

However, aviation experts and scholars have argued about how effective these efforts have been, some argue that the efforts have been effective and would be more effective as time goes on while others argue that the efforts have not been very effective (InterVISTAS 2014; Gleeve 2014). The implementation of sustainable business model by African airlines would go a long way in improving their efficiency. This is because of how fast and drastic the aviation environment can change. This implementation would take time to materialise as most African airlines follow the traditional FSCs and majority of them are state-owned, as usually only government can afford to operate FSCs (about 51% of African airlines are state-owned). The result of this is that LCC account for a very small percentage of African airlines, for example in 2020, there were only 10 LCC operating scheduled passenger flights (Heinz & O'Connell 2013; Ssamula 2009; Klisauskaite 2022). From the population of this thesis which were 169 airlines that collapsed in the last 20 years, the business model of 92 airlines were established, and out of these 92 airlines, 45 airlines (48%) were FSCs, 30 airlines (33%) were LCC, and 17 airlines were regional. Although most airlines that closed were FSC, this is expected as FSC airlines make up majority of airlines in Africa. However, the case is not the same for LCC, despite LCC making up a small number of African airlines, they make up a relatively big number in airlines that have collapsed. It is safe to conclude along with other experts that the African aviation environment is hostile to LCCs due to several different factors (Klisauskaite 2022).

The current global aviation environment looks rosy and appealing to launch an airline and many people are noticing this and launching or relaunching airlines, but the question is how many of these airlines would survive the next 5 or 20 or 100 years? After the deregulation in 1978, the aviation industry looked very rosy and many airlines were launched but only about 2% of these airlines are alive today, which shows that the usual trend is that most airlines collapsed with time (Udvar–Házy 2021; CAPAb 2021b; Howwemadeitinafrica 2019). There's usually some similarities or patterns to the demise of airlines, for example, in a study that looked at 30 airlines that had ceased operations between 2018 and 2019 saw a pattern to the reason for collapse among the airlines (Bailey 2019).

The theoretical framework of this thesis shows that businesses function in two environments namely: macroenvironment (external) and microenvironment (internal) and these environments are made up of factors that can have negative or positive effects on the business (Denton 2020). If the factors in these environments are not balanced proportionally, it can have negative effects on the business, and if left unattended can eventually lead to demise of the company (Beer 2008; Cronje & al. 2000). The Marketing mix for microenvironment and PESTEL or macroenvironment were the factors used in this thesis.

The qualitative data from the questionnaire also supports this notion that airline businesses close due to the negative effect of factors in the macroenvironment and microenvironment. For 8 out of the 14 factors listed in the questionnaire, majority of respondents chose the option 3 as the extent to which these factors negatively contribute to the failure of African airlines. This shows that respondents fairly agree that an airline's demise is due to internal, external, or combined factors.

From previous research, the factors responsible for various airline collapse include internal factors like corruption, government interference (this is considered internal if the government owns the airline) and bad operational decisions (such as congestion of resources to low traffic areas, over expansion of operations, wrong fleets, overstaffing and so on) and external factors like government policies, high operating costs, unstable operating environments, high capital financing, strict and changing regulations, political interference, (Heinz & O'Connell 2013; Ssamula 2009; Button & al. 2017; Bailey 2019). In a study by (Bailey 2019), two out of the three common reasons for airline closure among the 30 airlines that closed between 2018-2019 were all due to internal factors. In another case study by (Amankwah-Amoah & Zhang 2015) in which three airlines were studied, the internal factors that led to the airline's failure were rooted in mismanagement by the people in charge. The airline analysis which is the qualitative data of this thesis also revealed similar reasons as to why African airlines collapsed, with the most common reason being different forms of mismanagement, which is also an internal factor. The open-ended question about other factors contributing to the demise of Africa had 50% of respondents write some form of "poor management" which is an internal factor and 28% responded with "poor government" which is an external cause. This goes to show that previous research about airline collapse, qualitative data from airline analysis and quantitative data from questionnaire all agree that airlines collapse majorly from internal factors of poor management and external factor of government's policy, action, and interference.

8.3 Reliability and Validity

The reliability and validity section of a research are tools used to assess the credibility and quality of the research, they measure how good the approach and methods used in the research are (Middleton 2019). Reliability pertains to the consistency of the data being collected and measured while validity pertains to if the measured data are evaluating the right characteristics (Frost 2022). The importance of reliability and validity is to eliminate most forms of research biases and increase the credibility of the research, and so reliability and validity should be considered at every stage of research (Middleton 2019).

If a piece of research has high reliability, this means that the tools used for evaluating the data gives the similar outcome under the same settings, the results from the measurement if repeated would give similar outcome. If different outcomes are gotten every time the measurement is taken, then the data is not reliable, and it becomes difficult to make a good conclusion. Research with high validity means that the measurements gathered measured the right thing it was meant to measure (Middleton 2019; Frost 2022).

This thesis was reliable and valid because the conclusions from the data were like other researchers that used similar data set and had similar research objectives as this thesis. To combat unreliability and invalidity in this research, the data collection tools, theoretical framework and questionnaire were all adapted from previous research that conducted reliability and validity analyses. Also, the structure and approach of the thesis has been built on existing tested theories, for example the theoretical framework of the thesis make use of grounded theories such as PESTEL and Marketing mix that have been developed by scholars over the years.

8.4 Limitations and Challenges of the thesis

The limitations of this thesis were identified at the start and during the thesis and although, different measures were taken to contain these limitations, however, some limitations remained. The biggest limitation in this thesis was the sample size of the population, which was small (about 18%), this was due to unavailability of data on most airlines as there were even some airlines that data on the year of closure was not available. A bigger sample size would have deepened the airline analysis part of this thesis and strengthen the foundation of the thesis' conclusion. Another limitation was the data sources of the airlines analysed, most of the sources were from news website and databases, while databases are reliable sources, news sources are not always reliable, free, or bias and objective. This limitation was improved by using multiple news sources and comparing the data from them to draw conclusions.

The last limitation was regarding questionnaire, the questionnaire respondents were small, and it would have been possible to make better conclusions if the respondents were more. The use of questionnaire also comes with its own limitations as the researcher is unable to determine how truthful the respondents are, and some questions cannot be answered via questionnaire. For example, in the questionnaire, it would have been useful to hear the experiences of aviation workers or experts who have worked in with African airlines that have failed, an interview would have been the best to find out about the experiences. The questions in this thesis' questionnaire were also quite narrow and specific and did not allow respondents to expand on their choice of answer. The limitations with

the questionnaire were controlled to extent by comparing the results from the questionnaire with the literature review and airline analysis.

8.5 Conclusion

This thesis was birth out of the projected passenger growth in the African aviation industry and how airlines who are major stakeholders in the industry can be prepared to accommodate and benefit from the growth (ICAO). Despite the projected growth, the African aviation industry is faced with numerous challenges and African airlines are struggling to survive and thrive (Pinto, 2020; Worldometer 2022; Chingosho & Mombasa, 2013). Despite these challenges, there have recently been several new entrants to the African airline industry (CAPA 2021), while this is good news, African airlines must proceed with caution as over 640 African and middle eastern airlines have the “Out of Business” status according to Ch-aviation’s database. The only way airlines can accommodate and benefit from the projected growth is if they are still existing and thriving. By assessing at the primary cause of failure for previously existing African airlines, present and future airlines can learn from their predecessors.

The aim of the thesis was achieved as 31 failed airlines were analysed to reveal their primary cause of failure, aviation workers and experts’ opinions were also studied to back up the findings of the airline analysis. The results showed that the reason airlines collapse is due to the internal factor of mismanagement and external factor of government interference. The literature review supported the airline analysis and aviation workers’ opinions particularly on the aspect of causes of airline collapse. The results from this research can practically be applied to airlines especially airlines operating in the African aviation industry. Airlines can take note of the causes of African airlines failure and build their business model, operations, and strategy to avoid these causes, also the recommendations given in this thesis can also be implemented by airlines.

Although the objectives of this research were reached, there are still many questions that can be researched about concerning African airlines. Further research proposal could be research about:

- What are the major external causes to the failures of African airlines?
- Is there a pattern to the lead up of failed African airlines?
- How can African airlines survive and thrive in the current aviation environment?
- Why do most African airlines under the age of 5 collapse?

These further research proposals are very good because these topics provide information that can strengthen not only African airlines but global airlines as well.

8.6 Personal Learning Outcome

Personal learning outcome is important to assess the author's knowledge before and after the completion of the thesis. The process of writing this thesis started during the author's Orientation to Thesis Writing course, where a mock thesis was written and drafts for the final thesis were also created. The writing of the final thesis which includes brainstorming, researching, writing, editing and thesis seminar, took about 6 months starting from August. Before the start of the thesis, the author consulted with lecturers and colleagues about ideas for the thesis, which helped to build a structured thesis.

The biggest challenge faced while writing this thesis was time constraint, although the brainstorming and planning of the thesis started from August, the writing of the thesis did not start until November. This gave the author roughly 8 weeks to write the thesis, which meant the author had to dedicate about 6 hours weekdays to writing the thesis, this was achievable because the author was not taking any additional courses.

At the end of this thesis writing, the author has learnt the prerequisite for writing a thesis which includes researching, defining objectives and creating an outline. This thesis also taught the researcher the structure of a thesis which are introduction, literature review, methodology, data collection and analysis, interpretation, and conclusion. In addition to understanding the overall process of a thesis, the thesis also enabled the author to learn deeply about the fall of airlines. The author understands major themes and concepts in thesis such as mixed methodology, research design, African airline developments and liberalisation of African airspace.

The thesis process has also broadened the knowledge of the author regarding aviation industry, its business, developments, challenges, and future opportunities. As the aviation industry is broad, the thesis exposed me in-depth to the African sector. The results from the thesis are also learning points for the author in reference to the importance of management. The results of the thesis revealed that airlines fail largely from internal factors specifically poor management. As a student of management, the author now recognises effective management as a determining factor of the success.

In future research, the author would do some things differently based on the experiences and lessons from this thesis writing. The first thing to be done differently would be to give enough time for writing, to ensure the research is not rushed. Also, the author would read extensively on the themes of the research before delving into writing it, this would build the foundation of the research writing.

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Appendices

Appendix 1. Questionnaire

Internal and External Environmental Effects on African Airlines Failure

Please note that this questionnaire takes only 2 minutes to answer and respondents to the questionnaire will be anonymous. This survey is aimed at aviation workers and experts who have worked or are working in the African aviation industry. This questionnaire is for a bachelor's thesis at Haaga-Helia University of Applied Sciences. The thesis' objective is to identify the reasons African airlines have closed down in the past and to discover what is the pattern of the fall of African airlines. From the thesis' literature review and theoretical framework, it has been established that airlines are affected by internal and external environmental factors. So this questionnaire is to determine to what extent these factors contribute to an airline's failure.
Thank you for your time.

1. Age *

- 18-30
- 31-43
- 44 and above

2. Sex *

- Male
- Female
- Prefer not so say

3. Years of experience in the African aviation industry

- 0-10
- 11-20
- 21-30
- 31 and above

4. Sector you are working in within the aviation industry

- Airline
- Airport
- Regulatory organizations/Airline Trade associations
- Aviation journalist
- Aviation Law
- Ground handling
- Aviation Government sector
- Other

5. Based on your expertise and experience in the African aviation industry, to what extent do you think the following external factors contribute to the failures of African airlines? (with 5 being the highest extent and 1 being the lowest)
    - African government policies and actions
    - Economy (inflation, interest rates…)
    - Social factors (customers' demographic, lifestyle)
    - Level of technology advancement
    - Environmental factors
    - Aviation industrial laws and regulations

6. What other external factors do you think highly contributes to the failures of African airlines?

7. Based on your expertise and experience in the African aviation industry, to what extent do you think the following internal factors contribute to the failures of African airlines? (with 5 being the highest extent and 1 being the lowest extent)
    - Quality of African airline services
    - Location and flight destinations
    - Brand and marketing of airlines' services
    - Employee's performance
    - Airline's operations
    - Physical appearance (aircraft, website)
    - Management failure
    - Fleet composition

8. What other internal factors do you think highly contribute to the failures of African airlines?

Thank you for your participation!

Appendix 2. Defunct African airlines from over 20 years

Airline Name	Founding	Closure year	Operation Period	Business model	Location
Air Salone	2004	2004	0	FSC	Sierra Leone
Bravo Air Congo Brazzaville	2007	2007	0	FSC	DRC
Sénégal Airways	2004	2004	0	FSC	Senegal
Southern Star Airlines	2011	2011	0	LCC	Sudan
Confort Airlines	2011	2011	0	Unknown	Equatorial Guinea
Ivoire Airways	2004	2004	0	Unknown	Côte d'Ivoire
Midair of Liberia	2005	2005	0	Unknown	Liberia
Air Guinea	2004	2005	1	FSC	Guinea
Air Ylang	2018	2019	1	FSC	Comoros
Djibouti Air	2011	2012	1	FSC	Djibouti
Fly 6ix	2010	2011	1	FSC	Sierra Leone
Intercontinental Airways (Gambia)	2008	2009	1	FSC	Gambia
Nationwide Airlines (Zambia)	2001	2002	1	FSC	Zambia
Slok Air	2003	2004	1	FSC	Gambia
Airtime Airlines	2008	2009	1	LCC	South Africa
Eagle Atlantic Airllines	2012	2013	1	LCC	Ghana
Fresh Air (Zimbabwe)	2012	2013	1	LCC	Zimbabwe
Jet Express	2007	2008	1	LCC	Gabon
Namibia flyafrica	2014	2015	1	LCC	Namibia
Nicon Airways	2006	2007	1	LCC	Nigeria
Santaco Airlines	2011	2012	1	LCC	South Africa
ServisAir	2009	2010	1	LCC	Angola
Southeast Airlines (Kenya)	2014	2015	1	LCC	Kenya
Swift Air Malawi	2011	2012	1	LCC	Malawi
Arik Niger	2009	2010	1	Regional	Niger
Bumi Air	2012	2013	1	Unknown	Zimbabwe
Continental Wings-Comoros Airlines	2001	2002	1	Unknown	Comoros
SomAir	2014	2015	1	Unknown	Somalia
Stellar Airways	2011	2012	1	Unknown	DRC

Victoria International Airlines	2006	2007	1	Unknown	Uganda
Air Nigeria	2010	2012	2	FSC	Nigeria
Bravo Air Congo	2006	2008	2	FSC	Congo
Gambia Bird	2012	2014	2	FSC	Gambia
Discovery Air	2013	2015	2	LCC	Nigeria
Fly Kumba	2009	2011	2	LCC	Zimbabwe
RegionAir	2010	2012	2	LCC	South Africa
Velvet Sky Aviation	2010	2012	2	LCC	South Africa
Air Guinée Express	2002	2004	2	Regional	Guinea
Airlink Zimbabwe	2001	2003	2	Regional	Zimbabwe
Community Airlines	2007	2009	2	Regional	Tanzania
South Supreme Airlines	2013	2015	2	Regional	South Sudan
Aéro Bénin	2002	2004	2	Unknown	Benin Repub
Jet Congo Airlines	2012	2014	2	Unknown	Congo
Mondair	2002	2004	2	Unknown	Morrocco
Ocean Airlines (Comores)	2004	2006	2	Unknown	Comoros
Sunu Air	2003	2005	2	Unknown	Senegal
West African Airlines	2002	2004	2	Unknown	Benin
Slok Air International (Gambia)	2004	2007	3	FSC	Gambia
Air Go Airlines	2013	2016	3	LCC	Egypt
Fly 540 Angola	2011	2014	3	LCC	Angola
Fly540 Uganda	2008	2011	3	LCC	Uganda
SkyWise	2012	2015	3	LCC	South Africa
Fly Blue Crane	2014	2017	3	Regional	South Africa
Punto Azul	2013	2016	3	Regional	Equatorial Guinea
Aeolus Air	2012	2015	3	Unknown	Gambia
Air Horizon Togo	2004	2007	3	Unknown	Togo
Air Luxor GB	2003	2006	3	Unknown	Guinea-Biss
Burkina Airlines	2003	2006	3	Unknown	Burkina faso
Catovair	2005	2008	3	Unknown	Mauritania
Nayzak Air Transport	2006	2009	3	Unknown	Libya
SAGA- Sahel and Gulf Airlines	2017	2020	3	Unknown	Chad
STA Trans African Airlines	2002	2005	3	Unknown	Mali
Mauritania Airways	2006	2010	4	FSC	Mauritius
Tchadia Airlines	2018	2022	4	FSC	Chad
Zambezi Airlines	2008	2012	4	FSC	Zambia

Skyline Nigeria	1999	2003	4	LCC	Nigeria
Afrique Airlines	2002	2006	4	Unknown	Benin
Air Annobón	2012	2016	4	Unknown	Equatorial Guinea
Air Express Tanzania	2002	2006	4	Unknown	Tanzania
Eswantini Airlink	2018	2022	4	Unknown	Eswantiti
Khalifa Airways	1999	2003	4	Unknown	Algeria
Rahila Air	2016	2020	4	Unknown	Libya
Springboard Aviation	2016	2020	4	Unknown	Kenya
Gabon Airlines	2006	2011	5	FSC	Gabon
Korongo Airlines	2010	2015	5	FSC	Congo
Madagasikara Airways	2015	2020	5	FSC	Madagascar
Air Leisure	2013	2018	5	LCC	Egypt
Fly540 Ghana	2010	2015	5	LCC	Ghana
Star Equatorial Airlines	2006	2011	5	Regional	Equatorial Guinea
Air Inter Cameroon	2000	2005	5	Unknown	Cameroon
Air Togo	1998	2003	5	Unknown	Togo
Bako Air	2004	2009	5	Unknown	Central Afric Republic
East African Airlines	2002	2007	5	Unknown	Uganda
Regional Air	2000	2005	5	Unknown	Kenya
Space World International Airlines	2002	2007	5	Unknown	Nigeria
Gabon Express	1998	2004	6	FSC	Gabon
Ghana International Airlines	2004	2010	6	FSC	Ghana
Dasab Airlines	2001	2007	6	LCC	Nigeria
Starbow Airlines	2011	2017	6	Regional	Ghana
Charlan Air	2000	2006	6	Unknown	South Africa
Earth Airlines	2001	2007	6	Unknown	Nigeria
Transtel	1997	2003	6	Unknown	Togo
Air Uganda	2007	2014	7	FSC	Uganda
NasAir (Eritrea)	2006	2013	7	FSC	Eritrea
Senegal Airlines	2009	2016	7	FSC	Senegal
Trans Air Bénin	1998	2005	7	FSC	Benin
Capital Airlines (Nigeria)	2003	2010	7	Unknown	Nigeria
Lone Star Airways	1999	2006	7	Unknown	Liberia

Air Sénégal International	2001	2009	8	FSC	Senegal
JetLink Express	2004	2012	8	FSC	Kenya
Albarka Air	1999	2007	8	LCC	Nigeria
Fresh Air (Nigeria)	1999	2007	8	LCC	Nigeria
Afric Aviation	2009	2017	8	Regional	Gabon
Halcyon-Air	2005	2013	8	Regional	Cabo Verde
UTA - Union des Transports Africains de Guinée	1998	2006	8	Regional	Guinea
Air continental Africa	2000	2008	8	Unknown	Gabon
Millionair Aviation	1996	2004	8	Unknown	South Africa
Pelican Air Services	2001	2009	8	Unknown	South Africa
Bénin Golf Air	2000	2009	9	Regional	Benin
Flamingo Airlines	2000	2009	9	Unknown	Kenya
Freedom Air Services	1998	2007	9	Unknown	Nigeria
Imatong Airlines	2005	2014	9	Unknown	Kenya
National Airways Cameroon	1999	2008	9	Unknown	Cameroon
Air Mali	1993	2003	10	FSC	Mali
Mali Air Express	2005	2015	10	Unknown	Mali
Swazi Express Airways	1998	2008	10	Unknown	Eswatini
Wimbi Dira Airway	2003	2013	10	Unknown	Congo
Air Sao Tome & Principe	1995	2006	11	FSC	Sao Tome a Principe
Zambian Airways	1998	2009	11	FSC	Zambia
IRS Airlines	2002	2013	11	LCC	Nigeria
Afrijet Airlines	1998	2009	11	Unknown	Nigeria
Gambia International Airlines	1996	2007	11	Unknown	Gambia
Antrak Air	2003	2015	12	LCC	Ghana
Sosoliso Airlines	1994	2006	12	LCC	Nigeria
Marsland Aviation	2001	2013	12	Regional	Sudan
Interlink Airlines	1997	2010	13	LCC	South Africa
Oriental Airlines	1990	2003	13	Unknown	Nigeria
Sierra National Airlines	1990	2004	14	FSC	Sierra Leone
Djibouti Airlines	1996	2010	14	Regional	Djibouti
Bellview Airlines SL	1995	2009	14	Unknown	Sierra Leone
Comores Aviation	1997	2011	14	Unknown	Comoros
Eco Air International	1988	2002	14	Unknown	Algeria
Air Service Gabon	1995	2010	15	FSC	Gabon

Allegiance Airways Gabon	2001	2016	15	Unknown	Gabon
East Africa (1989)	1989	2004	15	Unknown	Kenya
EuroGuineana de Aviación	1997	2012	15	Unknown	Equatorial Guinea
Nationwide Airlines	1991	2008	17	FSC	South Africa
Bellview Airlines	1992	2009	17	Unknown	Nigeria
1time airline	1994	2012	18	LCC	South Africa
LAC-Lignes Aériennes Congolaises	1997	2015	18	Unknown	Congo
Business Aviation (Congo)	1988	2007	19	Unknown	Congo
Ci Tylink	1993	2012	19	Unknown	Ghana
Okada Air	1982	2002	20	Unknown	Nigeria
Ecuato Guineana de Aviacón	1986	2007	21	Unknown	Equatorial Guinea
ADC Airlines	1984	2006	22	FSC	Nigeria
National Overseas Airline	1979	2002	23	Unknown	Egypt
TMK Air Commuter	1986	2011	25	Regional	Congo
Air Affaires Afrique	1978	2003	25	Unknown	Cameroon
Air Gabon	1977	2006	29	FSC	Gabon
Air Namibia	1991	2021	30	FSC	Namibia
Nigeria Airways	1971	2004	33	FSC	Nigeria
Air Tchad	1966	2002	36	Unknown	Chad
Cameroon Airlines	1971	2008	37	FSC	Cameroon
Lina Congo	1965	2002	37	FSC	Congo
Air Inter Ivoire	1968	2006	38	Unknown	Cote d'ivoire
Air Afrique	1961	2002	41	FSC	Cote d'ivoire
Air Mauritanie	1962	2007	45	FSC	Mauritania
Ghana Airways	1958	2004	46	FSC	Ghana
Air Malawi	1964	2013	49	FSC	Malawi
Air Ivoire	1960	2011	51	FSC	Cote d'ivoire
TAM Madasgascar	1952	2003	51	Regional	Madagascar
African Eagle	1996	Unknown	####	Unknown	Kenya
BlueSky Airlines	2012	Unknown	####	Unknown	Congo
Equaflight Niger	Unknown	Unknown	####	Unknown	Niger
Interstate Airways	2012	Unknown	####	Unknown	South Sudan
Maluti Sky	2015	Unknown	####	Unknown	Lesotho
Pison Airways	2013	Unknown	####	Unknown	Ghana

South Sudan Air Connection	Unknown	Unknown	####	Unknown	South Sudan
United Airlines Uganda	1999	Unknown	####	Unknown	Uganda