



Challenges and Opportunities Underlining Africa's Aviation Landscape: A Multiple Lenses Analysis

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Aim/Purpose	This study sought to apply the Structure Conduct Performance paradigm to Africa's air transport landscape in general. To do that it examines the past, present and future expectations of four of Sub-Saharan Africa's biggest aviation economies namely South Africa, Kenya, Ethiopia and Nigeria. Secondary data containing historical passenger traffic was analysed and predictions for growth in the next ten years proposed.
Background	<p>There is consensus that overall the future of aviation in Africa has significant economic potential with significant other challenges needing to be overcome. The existence of a large land mass that requires connecting with itself, a growing population and specifically a growing middle class with an appetite for air travel, an extensive extractives sector and a growing tourism sector can provide the necessary demand conditions. In support of this, regional economic communities have led the way in implementation of Yamoussoukro Declaration (YD).</p> <p>This is especially so in West Africa through the West African Economic and Monetary Union (WAEMU) and the Banjul Accord Group (BAG), which have facilitated the development of the most, liberalized air transport market in Africa. At a higher level, the full implementation of YD requires that states disengage from the industry, liberalise access and facilitate the increased participation of the private sector. Some of the challenges that need to be actioned include high user charges and taxes, under-capitalization of African airlines and insufficient management experience, which have contributed significantly to the low profitability of African airlines.</p>
Methodology	<p>The case study approach is generally used to generate an in-depth comprehension of a complex issue in real-life. It is an established research design that is used extensively in a wide variety of disciplines, particularly in the social sciences. The study adopts a quantitative methodology based on the selected regional sample of countries under study and adopts the Structure Conduct Performance (SCP) model as a framework for analysis.</p> <p>The data set was for the previous twenty years and it was exposed to linear extrapolation to determine the expected future growth. Trend lines were included and standard regression modelling revealed the R² value for international and total air passengers per country.</p>



Findings	The research findings exposed the possibility of a significant upside in the development of the aviation industry in Africa <i>ceteris paribus</i> . In all the countries analysed it appears that the development of the industry is supported by strong tourism and travel demand by international tourists, and the various individual country as well as continent-wide measures towards liberalization of the African airspace.
Impact on Society	The findings of this study have shown that intra-Africa travel can be enhanced by a strong collaboration between airlines and states. Some strong opportunities have arisen from the enhancement of deep ties between national champions like Ethiopian Airlines and regional carriers in West Africa. Indicating that cross border and cross airline partnerships are a key ingredient for airlines to make a significant contribution to the economies in Africa.
Keywords	Liberalization, Air transport, Africa, Strategy, Structure Conduct Performance

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		<input type="checkbox"/> Art and Culture
		<input type="checkbox"/> Psychology/Consciousness
		<input type="checkbox"/> Astronomy
		<input checked="" type="checkbox"/> Economics

Human Elements Addressed		
<input type="checkbox"/> Personality Traits	<input type="checkbox"/> Development	<input type="checkbox"/> Mental Wellbeing
<input type="checkbox"/> Behaviour	<input type="checkbox"/> Environmental	<input type="checkbox"/> Consciousness
<input type="checkbox"/> Cognition	<input checked="" type="checkbox"/> Social	<input type="checkbox"/> Physical Wellbeing

INTRODUCTION

This study sought to apply the Structure Conduct Performance paradigm to Africa's air transport landscape in general. To do that it examines the past, present and future expectations of four of Sub-Saharan Africa's biggest aviation economies namely South Africa, Kenya, Ethiopia and Nigeria. Secondary data containing historical passenger traffic was analysed and predictions for growth in the next ten years proposed. The findings suggest that the experience of the existing liberalization initiatives such as the Yamoussoukro Declaration (YD) has produced less than expected benefits. However, the future of aviation in Africa is somewhat positive with growth trajectory expected to follow a linear and gradual path supported by various initiatives including the Single African Air Transport Market (SAATM) and the African Continental Free Trade Area (AcFTA). The study's contribution is to illuminate the current discourse on the aviation sector in Africa through the Structure-Conduct-Performance theory paradigm and suggests a conceptual model that could be applied to future studies relating to aviation in Africa.

REVIEW OF JOURNALS

There is consensus that overall the future of aviation in Africa has significant economic potential with significant other challenges needing to be overcome. The existence of a large land mass that requires connecting with itself, a growing population and specifically a growing middle class with an appetite for air travel, an extensive extractives sector and a growing tourism sector can provide the necessary demand conditions. In support of this, regional economic communities have led the way in implementation of YD. This is especially so in West Africa through the West African Economic and Monetary Union (WAEMU) and the Banjul Accord Group (BAG) which have facilitated the development of the most liberalized air transport market in Africa (Schlumberger, 2010). At a higher level, the full implementation of YD requires that states disengage from the industry, liberalise access and facilitate the increased participation of the private sector (Njoya et al, 2018). Some of the challenges that need to be overcome include high user charges and taxes, under-capitalization of African airlines and insufficient management experience, which have contributed significantly to the low profitability of African airlines. Air travel has dramatically revolutionized and unified humanity and revolutionized civilization by facilitating world tourism and trade (Strausz-Hupe, 1955). The world is now able to easily connect even the most isolated communities. Restrictions on the capabilities of individuals, firms and overall individual nations' growth can be mitigated through the growth and development of the sector. Aviation enhances international cooperation, economic development and integrations. However, the ability of airlines to access foreign markets and exploit growth expansion potential has been traditionally hindered by restrictive regulatory regimes (Abate, 2014). This state of play runs contrary to the *raison d'être* of aviation, which is to connect people. The airline industry presents a paradox (Doganis, 2006). It is the most international of industries, yet in terms of ownership and control, it is almost exclusively national. It is highly regulated with a beset by a complex web of economic regulations. The 1944 Chicago Convention laid the foundation for the future development of international civil aviation, which could greatly help to create and preserve friendship and understanding among the nations and peoples of the world. It could therefore, be argued, that improved intra-African connectivity can facilitate business and

trade, enables tourism, connects friends, families and cultures, and promotes the exchange of knowledge and ideas. That air transportation is vital for international people and freight facilitation is strongly supported by scholars and practitioners. The sector enhances regional integration through labour mobility, tourism and trade this is especially true when air travel is juxtaposed with the inadequacies of other forms of transport on the continent of Africa (Amankwah-Joseph; 2018; Steyn & Mhalanga, 2016; Njoya, 2016; Button et al, 2015, Heinz & O'Connell, 2013). The aviation sector in Africa has shown growth over the last 20 years. Growth in demand has arisen from competition for natural resources including oil, gas, mining and increases in inbound tourism, a growing middle class and an increased propensity to fly. Global aviation supports 65.5 million jobs, and supports 3.6 percent of global Gross Domestic Product (GDP). In Africa, the sector directly employs more than 415,000 people in 2016. It further supports 6.2 million jobs and 55.8 billion US Dollars' worth of economic activity in Africa. This is roughly 1.8 percent of all employment and 2.6 percent of total GDP on the continent. A primary outcome of the sector's activities in the facilitation of tourism. Tourism on the continent supported an estimated 4.9 million jobs and 35.9 billion US dollars to GDP in 2018. The air travel sector is projected to grow at about 4.9 percent per year over the next 20 years. It is estimated that by 2036 the air transport sector will support 9.8 million jobs and 159 billion US dollars in GDP (ATAG, 2018; ICAO 2019). In order to fully examine the dynamics of the air transport sector an exposition of the key economic and regulatory contexts is essential. The following section offers the relevant insights relating to the continent of Africa.

STATE OF AVIATION IN AFRICA

With 54 countries and an area of 30.2 million square kilometres, the African continent presents great distances between capitals, countries and commercial centres. Africa's population of 1.1 billion people represents more than 16.75 percent of the world's population. 16 out of 54 countries are landlocked; which is yet to be tapped fully by commercial aviation. As such, air transport presents the necessary tool for the facilitation of trade and the movement of people. Every person directly employed in the sector and in tourism made possible by aviation supports an additional 14.8 jobs elsewhere. In order to improve the greater facilitation of efficiency and competitiveness of air connections is required. This state of affairs presents opportunities for growth because despite the prospects present, the continent contributes 2 to 4 percent of the global passenger air service market (Schlumberger, 2010; Heinz & O'Connell, 2013; Abate, 2014; Njoya, Christidis & Nikitas 2018; ATAG, 2018), and less than 1 percent of the cargo market (Button et al, 2015; Abate, 2013) which is not in line with the continent's overall economic potential. Africa's demand for air travel is projected to reach a 5.8 percent growth rate within the next twenty years signaling opportunities for investors, airlines and airport operators (IATA, 2018). While it is evident that the aviation industry has the potential impetus to fuel economic growth within the African continent, several impediments still exist that may undermine faster progress (Samunderu, 2019). Aviation is a catalyst for growth and development driving inbound investments in countries and creating employment opportunities. As passenger volumes continue to grow and airlines worldwide expand their fleets, airport infrastructure is fast becoming a growth bottleneck. Examined holistically air transport in Africa, just as if the rest of the world is a major provider of employment opportunities, supports economic growth, is useful for connectivity and is a crucial enabler for facilitating tourism. African airlines control less than twenty percent of the intra-African air transport market and the lack of intra-African air connectivity has been identified

as one of the biggest challenges to air transport in Africa (Button et al 2015) and this has subsequently stifled rapid growth prospects (Sauderu, 2019). A possible reason for this is the existence before independence of air transport systems were based on colonial European commercial arrangements (Irandu, 1995; Steyn & Mhlanga, 2013) and safety and security concerns which are viewed as impediments to the growth of the air transport industry on the continent (Njoya et al 2018). Various initiatives have been proposed over the last sixty years to remedy the challenge of limited intra-African air connectivity. An outline of the journey of remedies to overcome the challenge of intra-African connectivity is elucidated. Beginning in the United States of America (USA) in 1978 there was a move to expose air transport services to market forces of demand and supply and the free movement of labour and capital. However, it is instructive to note that in 1961 the first initiative to liberalize the air transport market had already taken hold in Africa through the Yaoundé Treaty, which established the first jointly owned airline 'Air Afrique'. In 1988, the Yamoussoukro Declaration on market access for air transport in Africa was promulgated as a blueprint for the liberalization of air transport. It was viewed as a way to improve the competitiveness of national airlines; creating conditions for a higher degree of competition to flourish. This was viewed as preparation for the ripple-effects of economic deregulation in the USA, the movement towards an integrated European air transport market and the adoption of Open Skies policies elsewhere (Button et al, 2015). The Yamoussoukro Decision (YD) was signed by forty out of fifty four countries in 1999. It allowed the deregulation of air services and allowed for unrestricted frequencies between nations, improved safety standards and investment in civil aviation (Clark, 2014). YD provides for the full liberalization of intra-African air transport services in terms of market access, the free exercise of first, second, third, fourth and fifth freedom traffic rights to passenger and freight air services by eligible airlines. However, scholars agree that the progress of YD has been slow (Pirie, 2014, Njoya et al, 2018) as has been demonstrated by micro and macro level events such as the demise of thirty seven airlines launched between 2002 and 2012 on the continent. This has further been supported by the twenty countries subsidising their flag carriers, the development of large airports irrespective of the demands of their services (Schlumberger & Weisskopf, 2014).

Significantly, a study by INTERVISTAS (2014) has shown that full implementation of YD 1999 through cross-border liberalization of only 12 African countries' airspace is envisioned to create at least 5 million new passengers, 1.3 billion US dollars in annual GDP and 155,000 new jobs, a 75 percent increase in direct services, fare savings of 25 to 35 percent (Rivers, 2016). Amankwah-Amoah (2018) and Doganis (2006) succinctly describe the situation as the protection of flag carriers that are viewed as engines of growth and national and African sovereignty serving as detriments to the entry of new airlines; a situation that harkens back to the conflicting interests of colonial powers. Table 1 summarises some of the benefits and impediments to the full acceptance and execution of YD.

Table 1: Benefits and Impediments of Yamoussoukro Decision

Impediments	Benefits of Deregulation
Lack of political commitment and unification	New and expanded airlines including Starbow, Africa World Airlines (Ghana) JamboJet (Kenya)
Infrastructure, aircraft safety and security concerns	Increasing consolidation of the aviation market in the intra-African air transport market
Lack of effective enforcement mechanism	Accelerated new market entry
Uneven geographical distribution of Intra-African air passenger traffic predominantly linking large and medium hubs in Ethiopia, Kenya, Morocco, and South Africa	Advancement of the Low Cost Carrier (LCC) sector
YD not fully accepted in Africa – 11 countries including South Africa, Djibouti, Equatorial Guinea, Eritrea, Gabon, Madagascar, Mauritania, Morocco, Somalia and Swaziland did not ratify YD	Increasing private sector participation in the African air transport sector. Private carriers operating in domestic and regional markets
Collapse of numerous airlines including Air Afrique, Nigerian Airways, Ghana Airways, Cameroon Airlines attributed to liberalization and years mismanagement	Private participation in the airport sector including privatization of airports in Cote d' Ivoire, South Africa, Ghana, Nigeria and Botswana

Source: Amankwah-Amoah & Debra (2010); Bassens et al (2012); Otiso et al (2012); Schlumberger & Weisskopf (2014); Steyn & Mhlanga (2016); Amankwah-Amoah (2018); Njoya et al (2018)

Africa's failure to integrate and liberalize its intra-regional air transport market has been cited as a significant reason why growth in the air transport market has not reached its huge potential. Most countries rely on restrictive bilateral service agreements. This is a paramount reason why insufficient integration and lack of non-restrictive open skies policy present a major barrier to air transport growth in Africa. Open skies agreements not only enable better competition, it allows carriers of two or more countries to operate any route between the countries without interference in decisions about routes, capacity and pricing. The result is better service provision, affordable airfares an efficient service for the consumers. As part of the remedy for African aviation, a new initiative was inaugurated on January 28th, 2018, with the African Union (AU) heads of state launch of the Single African Air Transport Market (SAATM). In support of SAATM, the African Continental Free Trade Area (AfCFTA) and the visa facilitation initiative form the three AU Agenda 2063 flagship initiatives. These initiatives form the foundation upon which aviation in Africa is to grow and provide larger than forecast economic growth. SAATM is aimed at creating a single, unified and transport market in Africa. Twenty-six countries representing eighty percent of the existing aviation market in African have subscribed to the initiative. The goal of SAATM is to strengthen safety

and security oversight on the continent and promote a climate of cooperation among African countries through partnerships, mergers and acquisitions (SAATM handbook, 2018). The primary assumption of the initiative is that improved brands will compete favourably with stronger states or blocks of states from outside the continent. In addition, an added benefit of full implementation of SAATM is the guarantee of a larger market for African carriers and improved access to capital. A review of the literature reveals that the air transport sector in Africa has received deficient scholarly attention. The subject of YD continues to be the dominant topic of discussion with limited effort places in analysing the outcomes of its implementation through a theoretical framework. Such an approach would involve the deployment of among others economic development, welfare and business theories. What is lacking is a holistic theoretical framework that would provide a scientific basis upon which to review the sector. In as much as Africa is large, heterogeneous, and dynamic, the air transport industry remains a business whether privately or state managed. That makes the industry ripe for a fresh theoretical analysis.

RESEARCH PROBLEM

Various attempts have been made to examine the air transport industry in Africa. Heinz and O'Connell (2013) examined existing airline business models in Africa using the Product and Organizational Architecture (POA) framework. Their findings suggest that Low Cost Carriers (LCC) models produced mixed results and that Full Service Network Carriers (FSNC) and Regional Carriers (RC) were the most prominent and stable in Africa. The study objective was to determine the most financially suitable business models for African aviation. However, the authors acknowledged the need for government support in the form of stringent regulation and financial support. Steyn and Mhlanga (2016) analysed the impact of air transport agreements on the success of airlines in Southern Africa. The study was instructive in providing reasons for the slow pace of implementation for YD. This finding was supported by Button et al (2015) who also examined the impact of European colonialism on African air networks following independence. They found that colonial legacy countries have greater levels of intra-group trade when compared to non-intra-group trade countries in Africa. This finding was supported by evidence of distinctly larger coefficients for former French colonies compared to former British colonies; a finding supported by Njoya et al (2018). Similarly, Steyn and Mhlanga (2016) and Button et al (2015) found no indication that the liberalization of African skies as envisioned by YD was successful. These concerns are shared by other notable authors namely Schlumberger (2010).

Amankwah-Amoah (2018) applies dynamic capabilities (Teece, Pisano & Shuen, 1997) and institutional based theory to explain the competitiveness of airlines in Africa. The findings indicate that intra-African routes are dominated by international airlines. The study identifies limited economies of scale and quality of service as the main variables limiting variables to the international competitiveness of airlines in Africa. The study supports the implementation of YD. It also suggests strategic renewal of African airlines to enhance their competitiveness. At a more micro level, Abate (2013) argues that the understanding of the welfare effects of liberalization of the air transport market in Africa is rudimentary. Using supply side variables namely air fare and service quality and departure frequency, the study found a 40 percent increase in departure frequency in routes that were liberalized. However, there was no evidence for the argument that liberalization of air transport fully or partially resulted

in reduced fares. Neither is there support for the strategic lenses proposed. In fact, the study recommends a policy of liberalization of restrictive service frequency provisions. Njorog et al (2018) asserts that YD has failed and finds no single factor as significantly attributable to that state of affairs. A notable recommendation of the study is the need for regional groupings, the relaxation of visa requirements and the introduction of a common single transit visa at regional level. It is argued that these would boost the tourism industry, regional travel and promote the development of more regional airlines. The study posits that the demand for air transport in Africa is not sufficiently strong to support the 70 airlines operating on the continent. YD has not yet lived up to its stated objectives due to fragmentation of the air transport market, dependency on former colonial powers and retention of precolonial commercial networks, institutional weaknesses and the lack of cooperation among states. Budd et al (2014) found that of the more than 40 market entrants in European skies since 1992 only about a quarter still operate. Which lends credibility to the claim that the African context is not unique. A preliminary review of the literature reveals limited depth in studies directed towards the enhancement of the knowledge of air transport in Africa. At the same time, there remains a knowledge gap between industry structure and performance in this dynamic industry. A common thread in the dominance of studies related to the review of the success or failure of YD and the application of theoretical lenses including microeconomic welfare effects, dynamic capabilities model and the product and organizational organisation architecture model. As a result, there are varied approaches, differing objectives and mixed findings, which does not support the development of scientific inquiry. In summary, there exists a smorgasbord of literature and findings on the challenges and opportunities in the sector. What seems to be missing is a unifying concept and approach to dissecting the African air transport sector. Such an approach would both widen and deepen the knowledge of this under researched field of study. While some major factors relating to the development of air transport on the continent are proposed and supported by other studies, there remains a gap in knowledge from a strategy theory perspective. The Structure Conduct Performance (SCP) theory in particular offers a robust mechanism for describing and predicting the occurrence of poor or non-welfare maximising market performance through the description and prediction of oligopolies and monopolies structure. Thus, the SCP is widely adopted to evaluate competitive industries by investigating the structure of industry relates to firm behaviour (conduct) and performance. Such a situation pervades in Africa due to the existence of mainly national carriers and other non-state and state supported international airlines. As such the broad research question is – what role can the SCP framework play in the examination of the challenges and opportunities for air transport in Africa?

Inadequate effort has been expended in a holistic examination of the African aviation sector. In other words, moving the present level of debate from tactical and operational discussions to wider, longer-term perspectives that focuses on the future. This is especially important for how African airlines can leverage their capabilities to become world leaders in air transport. Past studies do not take into consideration key and imminent changes to the air transport industry on the continent of Africa and the world in general. It appears that there is a gap in the lack of a continent-wide study based on a single theoretical foundation in the industry. Consequently this study is examines the opportunities and challenges to air transport growth in Africa.

Therefore, the research objective can be outlined as:

- To assess the challenges and opportunities for African aviation

- To assess the role of SCP framework in the airline industry in Africa
- To propose a conceptual model for the examination of the airline industry in Africa.

With this approach, the study seeks to provide new insights into the role of strategy in the development of aviation in Africa. A theoretical validation will support the conceptual development of a model to this end. At a policy level, this study will provide a foundation of knowledge for decision making at national and regional level to support the growth of the industry and national economies.

THEORETICAL FRAMEWORK

In order that a theoretical framework proposed for this study is sound, several key elements are covered. The theory must be relevant to the research problem, namely the evaluation of strategy conception in a dynamic environment such as air transport, business or tourism, which this current study covers. Secondly, the theory chosen must be theoretically well founded. Third, it must be measurable. Stuckey (2008) posits that the integrated assessment of variables for strategy conceptualization is the main advantage of SCP. Teece (1997) criticizes the five forces model proposed by Porter (1980) in dynamic environments such as network-based business like airlines and shipping because it downplays feedback of firm strategies on industry structure. On the other hand, the competitiveness diamond (Porter, 1998) explores the role of industry in the competitiveness of territories. However, the framework is not explicit about performance objectives of the industry or the recognition of dynamic forces that can alter the competitive environment. It also tend to overlook comparisons among competing industries elsewhere. The current study examines the structure conduct performance (SCP) paradigm as it applies to industrial organisations. The SCP theory is a mechanism for describing and predicting the occurrence of poor or non-welfare maximising market performance through the description and prediction of oligopolies and monopolies. Mainstream industrial organization has been founded on the structure-conduct-performance paradigm (SCP). The Industrial Organisation paradigm has its antecedents in the Structure, Conduct, Performance model (SCP) developed by Robinson (1933), Mason (1939), Bain (1956) and Chamberlin (1965). The SCP model attempts to explain why, once outside the neoclassical assumption of perfect competition, firms are able to earn persistent profits that is above the break-even point. Structure Conduct Performance (SCP) Theory provides the building blocks upon which strategy formulation was constructed (Porter, 1981) the basic tenet of SCP is that the economic performance of an industry, which is described as the conduct of buyers and sellers, is a function of the collective performance of firms in the marketplace. Conduct is described as the activities of the industry buyers and sellers. Industry structure refers to the determinant of conduct. The essential link between industry structure and performance in the SCP framework is derived from the microeconomic model of perfectly competitive markets (McGee, 1988). As SCP is, a static model competition is viewed in terms of an equilibrium condition. Specifically that in the end perfectly competitive markets will result in the optimal welfare maximising allocation of resources in an economy (Samuelson, 1965). Uzunidis (2016) posits that SCP imagines a simplified version that in an identical market structure, the firms in two different sectors should have identical performance.

Bain (1956) expresses interest in industry as a group of competing firms and not in the firm alone as such. Entry barriers include economies of scale, absolute cost advantages, product differentiation, and capital requirements. This is because without entry barriers monopoly profits cannot exist in the long run. Because of this condition, structure determines potential performance. The SCP paradigm implies that the structural characteristics of an industry, especially the level of concentration of firms and the height of entry barriers have a significant influence on the ability of firms within an industry to price above the competitive rate. Consequently, these structural characteristics can be expected to determine the performance potential of firms. SCP is not without limitations. The assumption that all firms within an industry are homogeneous (Porter, 1981; Rumelt, 1991) has been criticized because the wrong level of analysis is problematic and will not lead to useful predictions or prescriptions of individual firm performance (McWilliams & Smart, 1993). Second, most business environments are not in a state of equilibrium. Static analysis of the relationship between structure and performance implies both the existence of optimal conditions and that these optimal conditions can be sustained over time (McGee, 1988; Grant 1995) which is not accurate because most business environments are not in a state of equilibrium (McWilliams & Smart, 1993). Luo (2014) argues that SCP lacks a focus on the dynamic nature of markets and changing environments and argues that the resource based view focuses on internal resources. Understanding and predicting the outcome of a process requires a dynamic analysis. Third, is the reliance on entry barriers. Investments in entry barriers cannot be expected to result in competitive advantage because barriers are subject to a free rider problem (Oster, 1990) which eliminates any incentive for an individual firm to erect entry barriers.

There are alternatives to SCP namely the efficiency paradigm proposed by Singleton (1986) which views competition as a process that generates efficient industry performance. The focus on industry structure and especially entry and mobility barriers may result in research that utilises the wrong level of analysis, inappropriate data and inconsistent methods (Porter, 1981; Barney & Hoskisson, 1990). SCP suggest that the structure is of overriding importance to competitive advantage. As such, research may focus on structural characteristics to the detriment of other variables such as firm resources, core competencies and decision-making processes. In addition the reliance on cross sectional data and methods derived from the static SCP model may limit testing of theories of sustained competitive advantage. Finally, viewing competition as a process is key. A competitive process can result in a range of market structures, some highly concentrated and some very un-concentrated (Singleton, 1986; Demsetz, 1982). Stigler (1983) explains that optimal firm size and thus the number of firms in an industry is determined by demand and cost conditions. As such, opportunities for competitive advantage are available across all market structures (Rumelt, 1991). A view from contestable market theory suggests that firms in highly concentrated industries such as airlines may not be able to achieve above average returns (Baumol, Panzar and Willig, 1982). De Figueiredo Junior, Meuwissen and Lansink (2014) propose an advancement of knowledge on SCP based on the effect of significant events such as technological innovations or social behavior changes, which create shocks. Such events are viewed as dynamic elements and provide feedback to the core elements of structure, conduct and performance. De Figueiredo et al (2014) argue that SCP is compatible with the Resource based View (RBV) (Wernefelt, 1984; Peteraf, 1993; Peteraf & Barney 2003) in attributing a firm's advantage to its conduct in acquiring and exploring valuable resources under an industry structure (Barney, 2001).

Penrose (1959) theory of the firm posits that the expansion of firms is largely based on opportunities to use their existing productive resources more efficiently than they are currently being used. To answer questions about price determination and resource allocation the theory assumes that firms are made up of bundles of productive resources, and that different firms possess different bundles of these resources. While the theory has remained valid, it has been criticized for its conceptual focus, which prevents the development of a richer, more complex, contingency-based model of firm growth. Furthermore, the theory does not consider the professionalization of management, evolution of technology, and other institutions that influence firms' growth. This points to challenges in its testability and hence generalizability (Nair, Trendowski, & Judge 2008). On the other hand, the Resource Based View School's view of the firm provides several important explanations of persistent firm performance differences (Wernerfelt, 1984; Barney and Clark, 2007). The resource-based view (RBV) rationale emphasizes value maximization of a firm through pooling and utilizing valuable resources. That is, firms are viewed as attempting to find optimal resource boundary through, which the value of their resources is better realized than through other resource combinations (Das & Teng, 2000). The dynamic capabilities framework was developed by Teece et al. in 1997 in order to present a Schumpeterian oriented approach of addressing the often-discussed question on how companies can achieve sustainable competitive advantage. The framework was developed from the theoretical background in the field of strategic management. Hence, aspects of models like competitive forces, strategic conflict or the resource-based perspective were taken into account (Samunderu, 2019). Constituent theories include the Dynamic Capability (DC) based view of the firm proposed by among others Teece, et al., 1997; Ambrosini & Bowman, 2009 and the Competence Based View (CBV) of the firm propounded by Hamel and Heene, 1994; Prahalad and Hamel, 1990. Barney and Clark (2007) are among the scholars who argue that RBV theories share the same underlying theoretical structure and differ only in their slightly different was of characterizing firm attributes. Thus, RBV is not about resources but it is about the attributes that resources must possess if they are to be a source of sustained competitive advantage. Core competence can be summarized as what a company does best. However, literature on CBV construct is full of overlaps and related concepts that are sometimes used interchangeably (Enginoglu & Arikan 2016).

In contrast organizational ambidexterity (Duncan, 1976) elucidate the ability of an organization to shift its own structures to initiate and execute innovation in order to explore and exploit. That is, to compete in mature technologies and markets where efficiency, control, and incremental improvement are prized and to also compete in new technologies and markets where flexibility, autonomy, and experimentation are needed (O'Reilly & Tushman, 2013). Since then research has found several ways of approaching ambidexterity within the field of management science. However, they all overlap in the idea of solving the paradox of being successful in today's business world, while concurrently being able to adjust to changes in the business environment in order to ensure the long-term survival of the firm (cf. Duncan, 1976; Gibson & Birkinshaw, 2004; Tushman & O'Reilly, 1996). Different approaches to strategy view sources of wealth creation and the essence of the strategic problem faced by firms differently. The resource-based perspective focuses on strategies for exploiting firm-specific assets and invites consideration of managerial strategies for developing new capabilities (Wernerfelt, 1984; Luo, 2000). The review of the literature leaves gap which needs ex-

ploring; specifically, the theoretical rationale for the strategic development of industry organisations that shape the survival and success of certain industries or industrial sectors. By its very premise, this study examines the aviation sector in Africa. Under the circumstances of the current study, the categories and indicators are not expected to be exhaustive or final but to cover the main aspects of the problem and evolve as new knowledge is incorporated. Should real conditions be taken into account by the SCP framework the theory has the advantage of leading the researcher to an overall vision of the problem as well as possible solutions, which is an important advantage at the operational level. Uzunidis and Laperche (2011) support the deployment of SCP due to its applicability to economic reality and in providing a tool to study the dialectic relationship between the impact of public policy and the corporate strategic choices from the macro to the micro economic level.

CONCEPTUAL MODEL

Efforts by De Figueiredo Junior et al (2014); Lou, (2014); Uzunidis, (2016) suggest conceptual models that offer a way to operationalize SCP. It is notable that the fundamental external elements used to analyse the functioning of a market are centred on the PESTEL political, economic, sociocultural, technological, ecological and legal considerations. , social and economic environment and structure, conduct and performance. Structure is found in the characteristics of market organisation, which influence the nature of competition and the formation of prices inside the market. The number and commercial size of the economic agents, creditors and barriers drive this. In addition the market demand behavior, concentration of clients and suppliers; rivalry intensity, entry barriers also apply here. There are also elements of substitute products, and natural, institutional environment and infrastructure. All these factors are readily found in the air transport industry in Africa. The models of behaviour applied by firms in order to adapt to the market exhibit conduct of the market. These include fixing prices, commercial strategies, and strategies of exclusion or participation. It could be surmised that conduct relates to how firms behave towards each other. Some key components of this are competition, process. Product or market, pricing, promotion, distribution channels, production technologies, sourcing, organisation; vertical, network and horizontal linkages, agglomeration, and the quality of supporting services. In the last decades the airline industry have been persistently less profitable and more financially vulnerable especially so in Africa.

Performance is the economic result of the structure and its conduct. It is concerned with the efficiency of the market at critical levels among them occupation, economic wellbeing, availability of food, level of supply prices among others; and the level of distribution of profits in society (Uzunidis, 2016; Luo, 2014). In this case some airline economic performance metrics including revenue per available seat kilometres (RASK), available freight tonne kilometres (AFTK), revenue passenger seat kilometre (RPSK), and market share are proposed. Operations = Revenue (RASK, RPSK), passenger load factors, market share, fleet size, Cost , Exogenous factors such as global oil spikes, financial crisis, global health emergencies i.e. SARS, COVID 19, 9/11 events. Others include Development such as local value added, local employment which relates to the African landscape's unique character. Of crucial importance are shocks that are proposed as an advancement of knowledge of SCP. Shocks are significant events such as technological innovations or social behavior changes, which create disruption. Such events are viewed as dynamic elements and provide feedback to the core elements of structure, conduct and performance. Further, De Figueiredo et al (2014) argue that SCP is compatible with the Resource based View (RBV) in attributing a firm's advantage

to its conduct in acquiring and exploring valuable resources under an industry structure (Barney, 2001). It is notable that even with these descriptions there does not exist a single one component of the SCP that is the cause of the performance. That is both conduct and market performance can affect each other. The conceptual schema presented below outlines the variables that could help strategists acknowledge and use factors that have otherwise been neglected by previous studies in the analysis of the air transport sector in Africa. It is conceivable that the model could be extended to the dynamics of the air transport sector in Africa. However, some caution is advised especially in the case where regulatory regimes are agreed at a global level for example SAATM, whereas at the local and regional level the same structural indicators could be applied quite differently as has been witnessed with the progress in YD at the regional economic communities levels in West Africa.

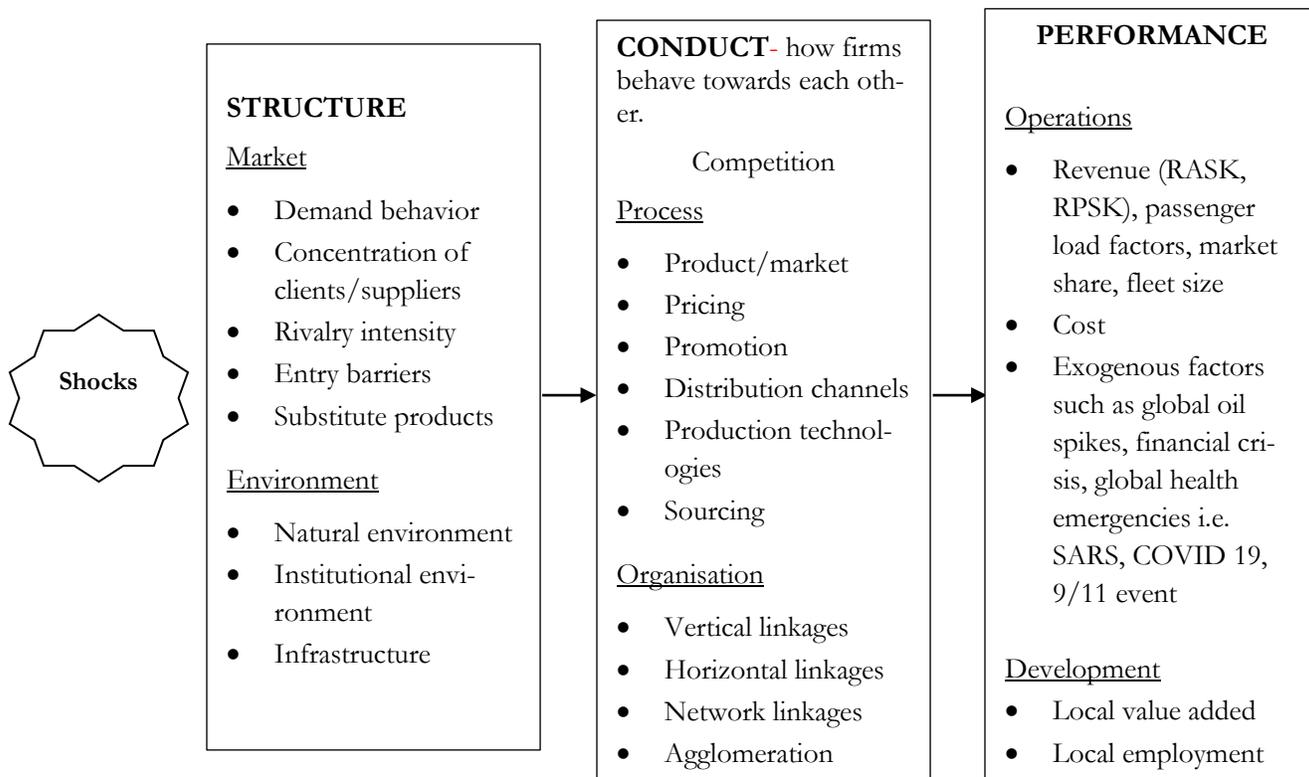


Figure 1 : The Dynamic SCP Framework

Source: Authors adaptation based on De Figueiredo Junior et al (2014); Lou, (2014); Uzunidis, (2016)

STUDY DESIGN

In the social sciences, the case study is applied extensively. The case study approach is generally used to generate an in-depth comprehension of a complex issue in real-life. It is an established research design that is used extensively in a wide variety of disciplines, particularly in the social sciences. A method is not the end in itself but a means for gathering data. A case study method assists in connecting the setting for research with the prior theory. The unique nature of the research object is a part of the setting for research, and thereby the ob-

jective is not to find universal rules but to understand the case or the cases in their own unique environment (Ia, Durepos & Wiebe, 2009). In regards to the present study, the researchers chose to the case study methodology to partly answer the research question.

DATA ANALYSIS

International arrival and departure data from the four countries related to this study was obtained with assistance from the Airports Council International (ACI) economics database for the years 1991 to 2018. The first stage was data cleaning, followed by consolidation and prediction using MS Excel. The data set was for the previous twenty years and it was exposed to linear extrapolation to determine the expected future growth. Trend lines were included and standard regression modelling revealed the R^2 value for international and total air passengers per country. Such a data analysis is relatively simple and reliable and the authors opine that this offers some insight to the progress of the key nations in the aviation sector in Africa for the near future. To support the data analysis and to give context to the data set a review of extant research provided much needed context and explanation. These two components combined to offer a case-by-case summary of the reviewed countries' air transport industry opportunities and threats.

CASE OF SOUTH AFRICA

Travel and tourism contribute significantly to the South African economy (Matshediso, 2014). Just like other parts of the continent, the share of the country's intra-African air traffic is about 80 percent and is controlled by non-African airlines (Smyth & Pearce, 2015). This situation is attributable to the lack of viability and economic challenges faced by local airlines and the strategic failure to identify critical success factors to help airlines manoeuvre out of these challenges (Kamath & Tornquist, 2004). In order to remedy the situation Steyn and Mhlanga (2016) examined bilateral air service agreements (BASA) between South Africa under the context of liberalization. Liberalization involves free entry and exit, with the freedom to set fares and select the routes to fly. Liberalization is seen as a catalyst to the promotion of competition among airline carriers and by doing so improve the quality of services to customers (Uzodima, 2012). Liberalization in South Africa encouraged new airlines to enter the market. However, few of them survived due to deficient management (Campbell, 2014), route restrictions, slot restrictions, and competition with the national carrier. Over time, the national carrier has accumulated huge debts due to inefficient management and has had to be bailed out repeatedly (Steyn & Mhlanga, 2016; Adegoke, 2019). South Africa is not a signatory to YD and some scholars among them Schlumberger (2010) contend that apart from the benefits to airlines and passengers, being a signatory would have made a significant contribution to the national economies of Southern Africa. It is notable that instead the nation pursued a bilateralism approach with other countries namely Kenya, Tanzania, and Botswana (Ndlovu & Ricover, 2009) with some level of success. In spite of these developments, the current study opines that the development of air transport in South Africa is expected to grow. The chart below shows the progression of international and domestic passengers in the period 1996 to 2030.

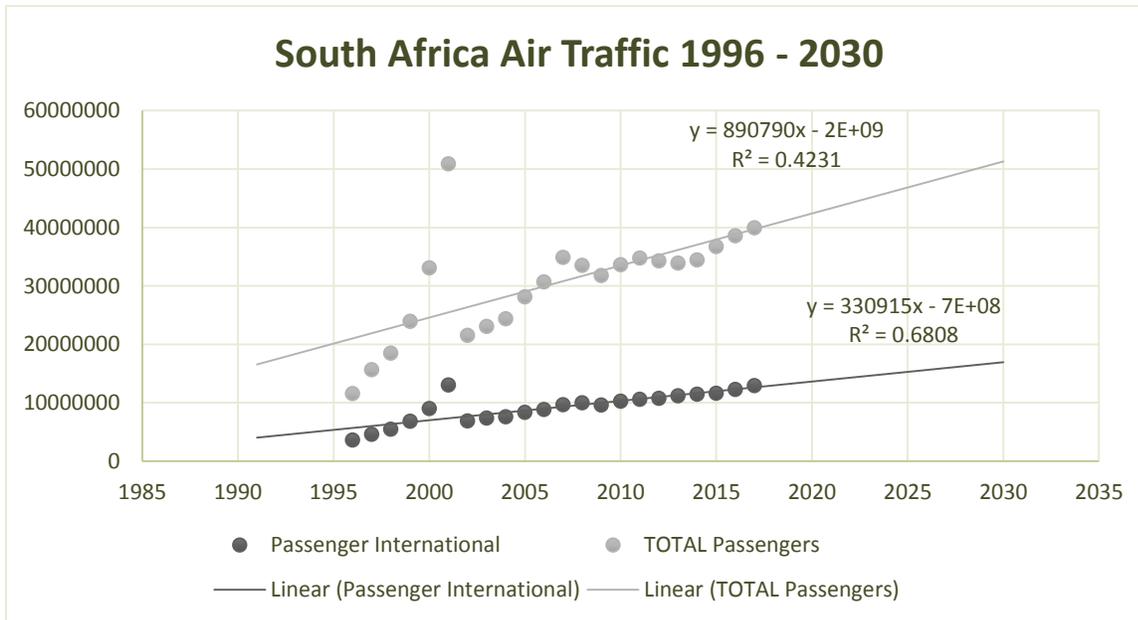


Figure 2 : South Africa Air Traffic 1996 – 2030

Source: Authors

According to Figure 2, the total number of air passengers in South Africa is expected to reach 50 million in the year 2030. The regression line for international passengers from 1996 to 2030 shows that it can explain 68.08 percent of the variation within the regression has fitted line, which is a significant finding. As such the model indicates that a fair level of certainty of the growth of international passengers leaving and entering South Africa. On the other hand, the regression line for total passengers explains a 42.31 percent of the variance. This indicates that there could be other factors that would explain or hinder the growth of the air transport market in the nation. Steyn and Mhlanga (2016) conclude that government control of implementation processes and continued protection and support for national airlines means that private airlines will struggle to survive.

CASE OF KENYA

Kenya is a long haul tourism destination and air transport is key for tourism, contribution to GDP and employment (Lucy, 2014). Tourism in particular has suffered the negative effects of insecurity that have seen dips and troughs over the last twenty years. In addition, the national carrier is plagued with challenges most notable of which include lack of capital, limited flight frequencies, low application of information technology, management instability and aggressive competition from Europe and the Middle East. The country was a signatory of YD and embarked on the liberalization of air transport since the 1990. As such key developments include the privatisation of the national carrier in 1996 and the signing of more than 57 BASAs by 2017 (Eric, Semeyutin & Hubbard, 2020; ICAO, 2017).

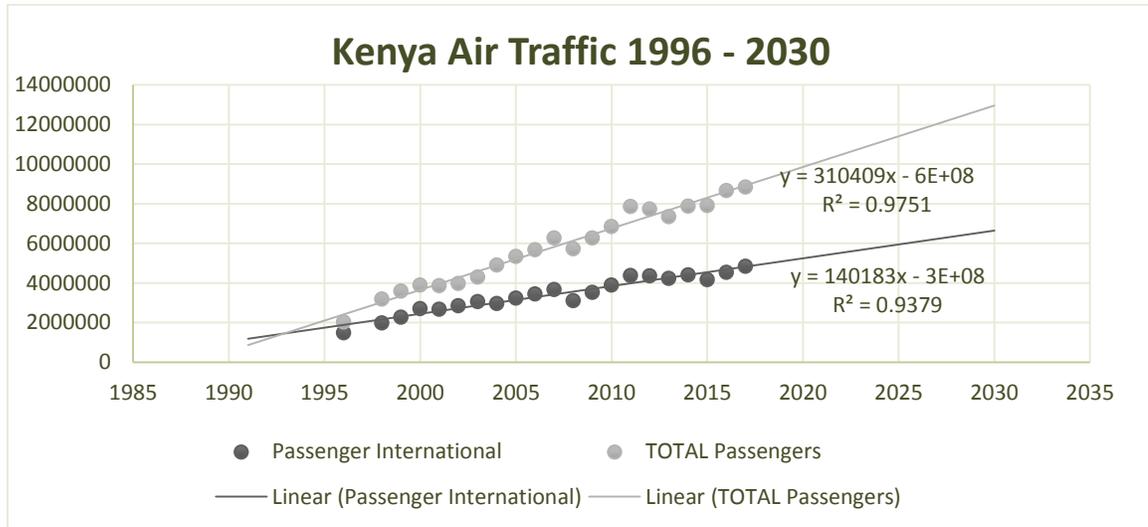


Figure 3 Kenya Air Traffic 1996 – 2030

Source: Authors

According to Figure 3, the total number of air passengers in Kenya is expected to reach 12 million in the year 2030. The regression line for international passengers from 1996 to 2030 shows that it can explain 93.79 percent of the variation within the regression has fitted line, which is a significant finding. As such the model indicates that a good level of certainty of the growth of international passengers leaving and entering the country. On the other hand, the regression line for total passengers explains 97.51 percent of the variance. Meaning that the model is a good estimate of the growth of the air transport market in the nation. It is predicted, that the regulatory framework for air transport will remain a key pillar in the enhancement of the benefits of the air transport sector in the country.

CASE OF ETHIOPIA

Ethiopia has grown a successful national carrier over the years. Success has emerged from a large intra Africa network, a strong hub with multiple-wave permutations for onward connecting traffic, and by forging deep strategic partnerships with regional based African carriers (Meichsner, O’Connell & Warnock-Smith, 2018). The Figure 4 below shows the progression of air transport growth for the country up to the year 2030.

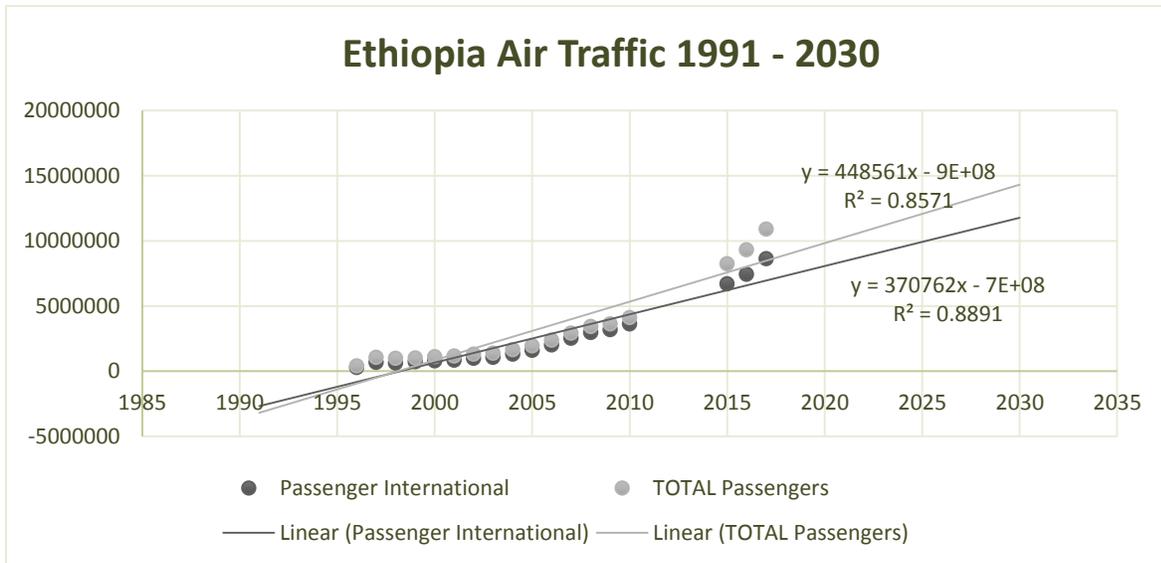


Figure 4: Ethiopia Air Traffic 1991 - 2030

Source: Authors

According to Figure 4, the total number of air passengers in Ethiopia is expected to reach 15 million in the year 2030. The regression line for international passengers from 1991 to 2030 shows that it can explain 88.91 percent of the variation within the regression has fitted line, which is a significant finding. As such the model indicates that a fair level of certainty of the growth of international passengers leaving and entering Ethiopia. On the other hand, the regression line for total passengers explains an 85.71 percent of the variance. This means that, there could be other factors that would explain or hinder the growth of the air transport market in the nation. This data does not cover transit passengers. The success of the national carrier in Ethiopia could be attributed to several factors. First, an understanding of the operating environment. Second, having the right business model and finally executing the right strategy.

CASE OF NIGERIA

Ismaila, Warnock-Smith and Hubbard (2014) opine that deregulation of the air transport sector in Nigeria to the level of open skies would stimulate traffic growth by at least 65 percent. Other studies by Daramola and Jaja (2011) found on the domestic air connectivity in the country suggest that the deregulation would have significant positive impacts.

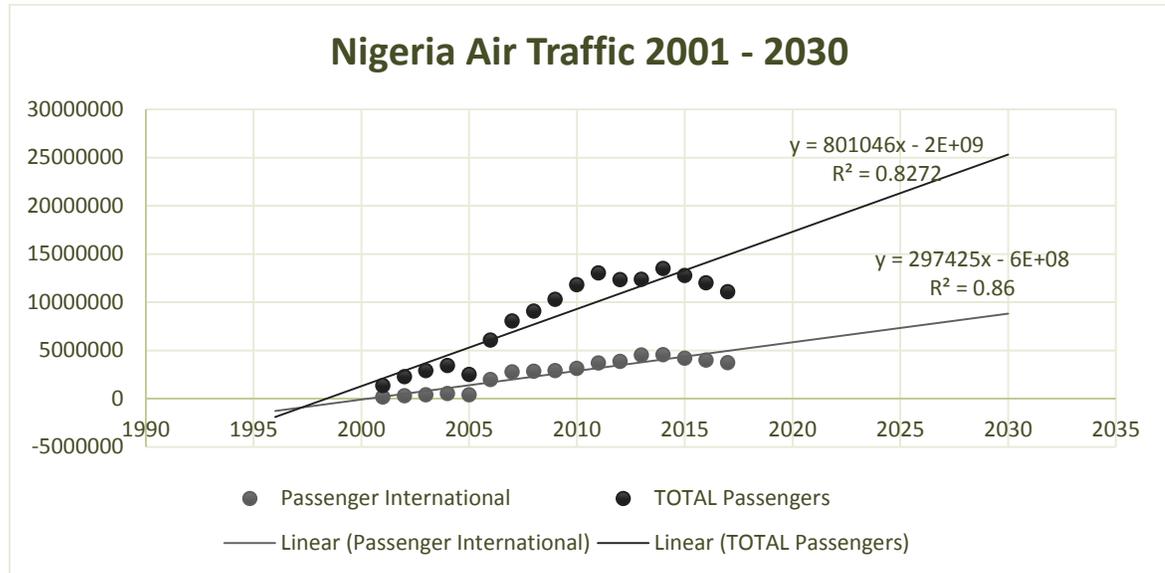


Figure 4: Nigeria Air Traffic 2001 – 2030

Source: Authors

Figure 5, suggests that the total number of air passengers in Nigeria is expected to reach 25 million in the year 2030. The regression line for international passengers from 1996 to 2030 shows that it can explain 86 percent of the variation within the regression has fitted line, which is a significant finding. As such the model indicates that a fair level of certainty of the growth of international passengers leaving and entering Nigeria. On the other hand, the regression line for total passengers explains an 82.72 percent of the variance. This means that there could be other factors, which would explain or hinder the growth of the air transport market in the nation.

DISCUSSION

The data analysis has exposed the possibility of a significant upside in the development of the aviation industry in Africa *ceteris paribus*. In all the countries analysed it appears that the development of the industry is supported by strong tourism and travel demand by international tourists, and the various individual country as well as continent-wide measures towards liberalization of the African airspace. These initiatives and manoeuvres have borne fruit and have shown that Intra-Africa travel can be enhanced by a strong collaboration between airlines and states. Some strong opportunities have arisen from the enhancement of deep ties between national champions like Ethiopian Airlines and regional carriers in West Africa. Indicating that cross border and cross airline partnerships are a key ingredient for airlines to make a significant contribution to the economies in Africa. The threats include limited actions on the ground as relates to the full liberalization of the African air space. In addition, the challenges of deficient management, large debts plague both South Africa and Kenya's largest airlines. Other threats include route restrictions, slot restrictions, and competition with the national carrier. In a significant number of instances, the lack of an active and holistic political support for liberalisation remains the single largest threat to the development of the industry on the continent.

tory to YD and some scholars among them Schlumberger (2010) contend that apart from the benefits to airlines and passengers, being a signatory would have made a significant con-

tribution to the national economies of Southern Africa. In general, there is scant academic effort expended in investigating the air transport sector in Sub-Saharan Africa. In addition, the extant literature suggests that the subject of YD continues to dominate debate, with effort expended usefully in examining the reasons for its successes and failures. The current study has examined and argued for the theoretical grounding offered by the SCP and found that there are gaps in the study of air transport in Africa that require further examination. Notably that the conduct and performance aspects of African aviation offer a wide and deep pool for further examination. The study has also found that the growth of the aviation sector on the continent, going by the exposed developments in South Africa, Kenya, Ethiopia and Nigeria, is a promising one. In addition, one that requires further and deeper analysis. This study offers a versatile platform from which the extension of aviation policy in a turbulent world and more so in Africa can be made.

LIMITATIONS OF THE STUDY

The research question of this study is directed towards the possible application of the SCP framework in the African aviation sector. In general, the SCP paradigm is recommended when analysing the characteristics of market structure, firms' conduct and performances, allowing for the utilisation of a wide range of variables. In the same manner, the paradigm provides a useful framework, which includes the domains of activity and the markets as basis for analyses. Thus, SCP paradigm has multiple purposes as a tool for analysis and is especially valuable in examining economic challenges in a general manner. Its strength resides in the fact that it is a method appropriate to provide a perspective of the market as against that based only on one sector. The outcome of this study shows that the research question offers potential for further academic inquiry. The study objectives included the need to assess the challenges and opportunities of the aviation sector in Africa. Second was to propose an alternative strategic approach based on the industry structure conduct and performance and to propose a theoretical frame with which to accomplish that objective. Third, the study aimed to elucidate a conceptual model for the examination of the aviation sector in the continent. The first objective was partly accomplished via case studies of four major aviation economies on the continent. The second objective was somewhat accomplished by the proposed SCP framework. With continuing scholarly efforts, the opportunities to further explore this objective exist. The third objective was accomplished by proposing a conceptual schema based on extant research on SCP theory.

Data availability was a challenge especially for the depth of variety related to SCP and the specific indicators per category in the conceptual model. Due to time and cost constraints the main data source included air traveller data over a period of twenty five or more years obtained from a single source. Even though the data was from an authoritative source, data triangulation was not conducted. In addition, the results of this study could be considered exploratory as they did not include other components such as airline profit and cost data under the component of economic performance. While the environmental concerns have been highlighted, specifically the institutional environment relating to YD, there are still some significant data points that are required such as process, organisational and developmental variables that the SCP model suggests. Finally, it is apparent that the passenger data does not cover the same time dimension for every country observed. As such, the findings may present skewed findings. Despite that limitation, the authors opine that the data covers a suffi-

ciently long duration of time to support the findings of the study. As at the time of writing of this article the WHO was first alerted to a cluster of pneumonia of unknown aetiology in Wuhan, People's Republic of China on 31 December 2019. The virus was initially tentatively named 2019 novel coronavirus (2019-nCoV). Coronavirus and the resultant COVID 19 disease became a public health concern of international concern. Most notably it had resulted in 1,131,713 confirmed cases and 59,884 deaths as at 4th April 2020; 35,701,674 confirmed cases and 1,045,953 deaths by October 5th 2020 w (Johns Hopkins University & Medicine, 2020). An outcome of the spread of the virus has been the closure of borders between countries and the restriction of movement of transport within many countries in the world. That has led to the significant decline the tourism and travel industry. All the African countries highlighted in this study had reported confirmed cases. As the disease is communicable person, many of the countries affected have taken drastic measures to control the movement of people across borders including the suspension of all international air travel. This has resulted in the grounding of passenger airline operations, which has precipitated a global decline in tourism activity and economic slowdown all across the world. The global spread of COVID 19 threatens to change the dynamics of an industry that is already highly prone to external shocks. For Africa, the ensuing reduction in tourism and travel, and lower passenger density in the intra-Africa routes portend a decline in aviation activity. This situation, should it escalate could possibly lead to bankruptcies for fragile air carriers in Africa.

CONCLUSION

A preliminary review of the literature reveals that relatively little effort has been made in examining the air transport sector in Africa as a whole. This especially in view of its significance as an industrial organisation subject to the principles of business and strategy. This study has made a significant step in beginning that journey. The dearth of information and data mean that the study objectives require further access to data and deeper analysis. Future studies could define specific social and environmental conduct and performance categories, and investigate interactions among them as well as their crossover effects. In particular, the SCP framework has been criticized many times and even changed without being called completely into question. This makes it a robust theoretical framework with which to examine the air transport industry in Africa. Future research could extend the present one by analysing a different set of data. As an example, a multi-airline, multi-country case study for competing airlines or nations would represent suitable case studies for comparison under the SCP framework presented in this paper. An important conclusion from this paper is that disruptive global events or shocks can present overwhelming sets of challenges such as global travel restrictions, border closures that may result in the economic disruption to the highly fragile air travel industry. Those challenges and the ensuing outcomes may not be completely envisioned by the theoretical model presented in this work and the authors suggest that those emerging challenges would in fact require new strategic lens. Practically the current COVID 19 epidemic has been unexpectedly rapid in its global expansion; add to this the vastly unknown character of recovery for the human population as well as the unknown time to recovery and normalization. Other studies could explore the impact of such global pandemics on the strategies for the development of air transport in Africa.

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